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BAIDU 2020 ENVIRONMENTAL , SOCIAL AND GOVERNANCE REPORT



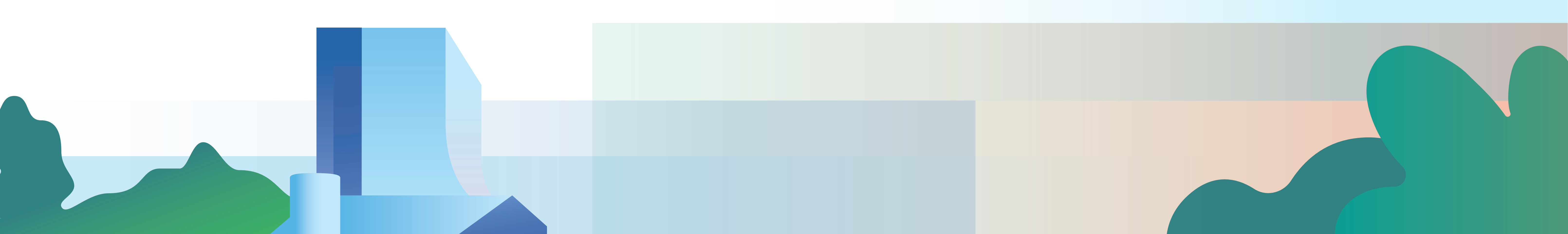


Make the complicated world simpler through technology

Baidu 2020

Environmental, Social and Governance Report

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Letter from our CEO



Robin Yanhong Li

Chairman, Chief Executive Officer and Co-Founder

Do Better with Tech

When Baidu was founded 20 years ago, we were dreaming of changing the world with technology. Today, our original aspiration remains unchanged and we are on a mission to "make the complicated world simpler through technology".

2020 was an extraordinary year for both China and the rest of the world. The unexpected COVID-19 pandemic has accelerated unprecedented changes around the globe. The devastating virus, economic recession and governance difficulties are prominent challenges facing humanity. Nevertheless, the pandemic has also enabled people around the world to have a stronger sense of the spirit of solidarity and the concept of "building a community with a shared future for mankind".

Guided by our vision of "Do Better with Tech", Baidu actively explored ways to enhance corporate governance, build trust, nurture talents, promote sustainability, improve service and contribute to society in the past year, aiming to address social problems with technology and continuously contribute to the development of human society.

Acting in line with government policies, we have been building green data centers, promoting low carbon ways of production and living and accelerating our deployments in the new energy and intelligent vehicle industry; we have been facilitating the development of a cybersecurity ecosystem and a healthy and prosperous cyberspace environment by leveraging AI-powered security technologies; we, at the first opportunity, launched an AI temperature monitoring system to help the pandemic prevention and control and reduce infections; by working with related national departments and leveraging the cross-age face recognition technology, we have helped over 10,000 missing people to be reunited with their families; we value talent development with over 1 million AI specialist cultivated and pledge to produce 5 million more in the next five years.

Baidu is a pioneer in technology and beneficiary of China's national and social development. With our technological strengths, we will assume more social responsibility, which is also our original aspiration in pursuing technology development.

As a new round of technological and industrial revolution rises, cutting-edge technologies, such as AI, are exerting a wide and profound influence on our society and economy. Following the principle of "Responsible AI" and with an open and inclusive attitude, we joined hands with stakeholders, including partners, industrial associations, research institutions and social organizations, to construct the AI ecosystem. We constantly deepen our study on AI ethics and actively engage ourselves in the development of standards related to AI to guide AI advances in the industry.

A seven-year-old girl likened her trip in Beijing Haidian Park, the world's first AI park, to a journey to the future; a visually-impaired user told us that Xiaodu Smart Speaker was like his eyes, bringing him the convenience he had never enjoyed; a rural teacher said that Baidu-backed online courses made her and her students feel like they had invited all top teachers to their school; my colleagues find that an increasing number of citizens are trying our self-driving cars. These stories all convince us that technology can deliver a better life for more people.

Looking ahead, Baidu will continue to honor our mission to "make the complicated world simpler through technology" and improve our ESG management. Internally, we will strengthen corporate governance and business ethics, enhance our capabilities to safeguard cybersecurity and privacy protection, pursue green development and value talent cultivation. Externally, we will facilitate the cultivation of professionals, join hands with partners to advance industry development, bridge the digital divide, care for the vulnerable, as well as be responsible to stakeholders and contribute to society by virtue of our advantages in products and technologies.

The world moves on in a never-ending process of the new replacing the old. Technology has been advancing by leaps and bounds in the last 200 years and brought unprecedented changes to our ways of production and living. Technological innovations and applications have benefited tens of millions of people. As a strongly positioned AI ecosystem company and by seizing the opportunities in promising AI fields such as intelligent cloud and intelligent driving, Baidu will go even further in our technological conquest of the sea of stars; we are also convinced that, on the path of changing the world with technology, ever-growing streams of people will join us in creating an even better future with the benevolence of technology.

李彦宏

About us

Our mission is to make the complicated world simpler through technology. We focus on innovation, understanding users' needs and enabling their growth.

Baidu was founded in Zhongguancun, Beijing, on January 1, 2000, and was co-founded by Robin Yanhong Li, creator of visionary search technology Rankdex, a method of hyperlink analysis, which also made China one of the only four countries in the world with core search technology outside of the United States, Russia, and South Korea. Baidu has evolved into the world's largest Chinese search engine, China's largest comprehensive Internet service company, and a world-leading AI platform.

Every day, Baidu responds to billions of search requests from more than 100 countries and regions. It is an important portal for Chinese information.

Driven by AI, Baidu has built the Internet's most powerful mobile ecosystem. Its main pillars are Baijiahao, Smart Mini Program, and Managed Page.

- Baijiahao is a blog-style platform. By December 2020, it had attracted 3.6 million creators.
- Smart Mini Program is a fully open-source mini-programs platform, with more than 500 million monthly active users.
- Managed Page is an alternative for HTML site owners to use as the landing page for search results.

By December 2020, our Baidu App had 544 million monthly active users and its daily login users accounted for more than 70%. Our major knowledge products include Baidu Knows[1], Baidu Wiki[2], and Baidu Wenku[3]. They produced more than 1 billion high-quality entries, creating China's richest knowledge content system.

Baidu Brain is China's leading software and hardware-integrated AI production platform. It offers more than 270 core AI capabilities for external users and serves more than 2.65 million developers.

PaddlePaddle is China's first independently developed, fully open-sourced and fully functional industry-level platform for deep learning.

[1] Baidu Knows is a question-and-answer community where questions are asked, answered, and organized by our users. The answers posted on Baidu Knows are generated by our users, professionals, enterprises and governmental agencies.

[2] Baidu Wiki is a wiki, compiled by experts in specialized fields, featuring high-quality columns, such as Encyclopedia of Intangible Cultural Heritage, Digital Museum and Recorder of History, as well as a complete video-based knowledge source.

[3] Baidu Wenku hosts a library of digital documents, covering a wide range of content, such as education, architecture, law, internet and finance, shared in forms such as academic papers and PowerPoint presentations by professionals, enterprises, institutions and other users.

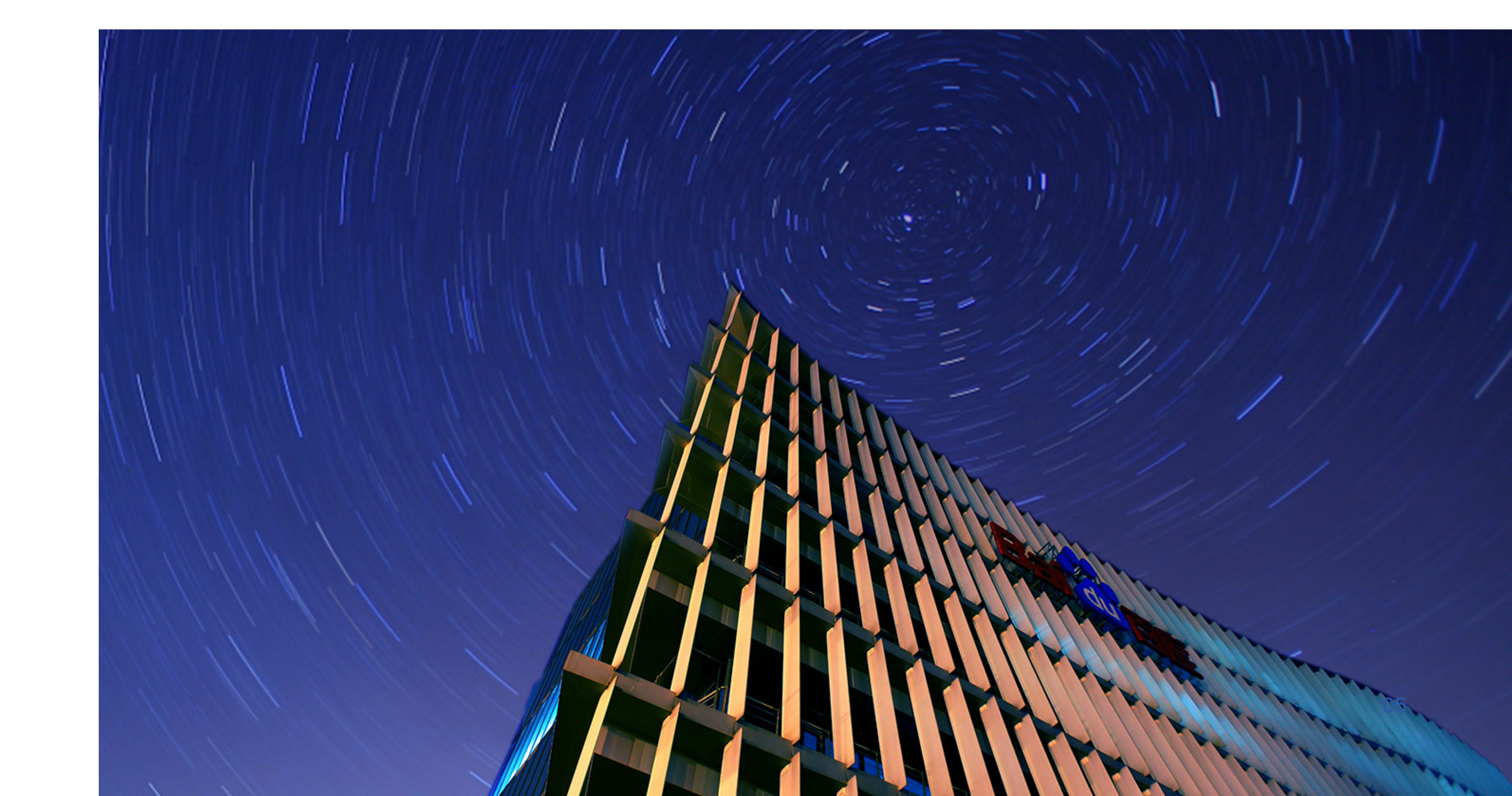
Baidu AI Cloud is an important carrier of Baidu AI services provided to businesses and leads in industrial intelligence.

DuerOS is China's prosperous conversational AI operating system. By December 2020, monthly voice interactions with DuerOS exceeded 6.2 billion.

Baidu Apollo represents China's strong autonomous driving capabilities and is recognized as one of the world's top four leaders in autonomous driving by Navigant Research, the well-known research company. It has open platforms for autonomous driving, smart transport, and the Internet of Vehicles, and provides solutions for intelligent network connection and intelligent transportation. ACE Transportation Engine is the world's first full-stack intelligent transportation solution integrating vehicle, road, and driving.

Baidu has a strong faith in technological innovation and has been at the international forefront in innovation investment, R&D, and talent introduction. In November 2020, the National Industrial Information Security Development Research Center and the Electronic Intellectual Property Center under the Ministry of Industry and Information Technology released the *2020 Analysis Report on Chinese Patented Technologies in Artificial Intelligence.* According to the report, by the end of October 2020, Baidu had 9,364 patent applications and 2,682 patents granted in artificial intelligence, ranking first in China on both indicators. It also ranked first in seven AI fields, including deep learning, intelligent voice, natural language processing, autonomous driving, knowledge graph, intelligent recommendation, and big data in transportation.

We focus on fulfilling our social responsibilities and operating under the principle of science and technology for a better life. We are committed to upholding social responsibility practices when developing new products and upgrading services. Baidu AI Xunren, a joint project with the Ministry of Civil Affairs, leverages age-invariant facial recognition technology to find missing people and has helped a total of 11,942 missing individuals to reunite with their families. The Baidu Common Benefit Project has received applications from more than 300 charity organizations and helped more than 200 to promote their charity causes on Baidu, covering a wide range of fields including education, environmental protection, healthcare, and poverty alleviation.



About the report

Baidu joined the UNGC in 2008 and made a solemn commitment to promoting the sustainable development of the Company in human rights, labor standards, environment, and anti-corruption. Since 2008, Baidu has released five reports on the social responsibility, which focused on Baidu's unremitting efforts in giving back to society and fulfilling its responsibilities as a corporate citizen. In 2020, Baidu officially released the *Baidu 2019 Environmental, Social and Governance Report,* its first ESG report, comprehensively presenting Baidu's confidence and determination in building a sustainable business model. This report is the second ESG report released by Baidu. We will continue to uphold an open, transparent, practical, and realistic attitude and share Baidu's progress and results in ESG with all stakeholders.

This report is prepared in accordance with the *ESG Reporting Guidelines 2.0* issued by the Nasdaq Stock Market and the consultation documents on the review of the *Environmental, Social and Governance Reporting Guidelines* and the relevant provisions of the *Listing Rules* issued by the Hong Kong Stock Exchange. It also refers to the Ten Principles of the UNGC, the *GRI Standard* issued by the Global Sustainability Standard Board, focuses of ESG indexes and rating agencies such as MSCI, DJSI, and Sustainalytics, and the *Integrating the SDGs into Corporate Reporting: A Practical Guide* jointly issued by the GRI and the UNGC. For more information about anti-corruption governance, privacy protection and data security, human capital, and the environment of the Company, please refer to our 2020 ESG series of special reports at http://esg.baidu.com/en/esg_download.html.

The data and information disclosed in this report are cited from internal official documents and statistical reports of Baidu, covering all Baidu Core[4] business from January 1, 2020 to December 31, 2020.

Baidu will publish the report in both simplified Chinese and English on its official website[5] simultaneously. For any comments, please email us at esg@baidu.com.

4 Not including Baidu's holding companies

5 http://esg.baidu.com/en/index.html



2020 highlights

Our awards and recognition



Baidu's efforts were widely recognized in 2020:

- We were cited as one of *Harvard Business Review's* **top five global AI companies.**
- We were cited among **the 50 Smartest Companies** by MIT Technology Review for the third consecutive year.
- We signed ***A Statement from Business Leaders for Renewed Global Cooperation*** initiated by the UNGC.
- We ranked **second in China, and 42nd in the world,** among the most influential technology companies in the World Benchmark Alliance's Digital Inclusion Benchmark listing.
- We ranked among Forbes' **World's Best Employers.**
- We were named **Advanced Anti-pandemic Group in Industry and Information Technology** by the Ministry of Industry and Information Technology.
- Our 2019 ESG report was cited for **excellence** by the Committee on Social Responsibility of the Chinese Electronics Standardization Association, the Ministry of Industry and Information Technology.
- For our best practice, we were listed in the second collection of **2020 Excellent Examples for Network and Data Security Compliance Assessment** by the China Academy of Information and Communications Technology.
- We were among the first winners of the **Quantitative Management Level (Level 4) certificate** of the Data Management Capability Maturity Assessment Model (DCMM-National Standard).
- As the first batch, we were among signatories to the Ministry of Industry and Information Technology's ***Telecom and Internet Industry Network Data Security Self-Regulation Convention.***
- We were ranked among the **top 100** in Zhaopin's **China's Best Employers.**
- We were ranked among the **top 100** in 58.com's **China's Best Employers for College Students.**
- We ranked among 58.com's **Employers with Outstanding Contribution to College Students' Employment.**
- We were named **the Best Employer for Public Welfare Practice during COVID-19** by 58.com.
- We were named **Extraordinary Employer** by Liepin.
- We were cited as one of CIWEI Live's **Top 10 Popular PICK Employers of College Students.**

Our ESG highlights in 2020

Enhancing corporate governance



1,928 hours

Our professional ethics-related training totaled 1,928 hours.



132 complaints

Our Professional Ethics Department received 132 complaints, among which 37 cases are under investigation and 95 have been resolved, saving Baidu over CNY 17 million.



CNY 564,000

Baidu employees auctioned gifts received from our partners through the Baidu Foundation. A total of CNY 564,000 was raised for public welfare.

We joined the Enterprise Anti-fraud Alliance

We joined the Enterprise Anti-fraud Alliance.

Building trust



More than 30 national standards

We participated in the formulation of more than 30 national standards in the field of network security.



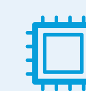
Awarded Big Data Product Capability Evaluation Certificates

The Baidu Fedrated computing platform and MesaTEE universal secure computing platform — our big data security products — were awarded Big Data Product Capability Evaluation Certificates by the China Academy of Information and Communications Technology (CAICT).



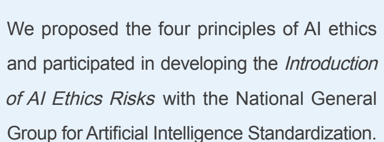
Obtained the certification for mobile internet app security

As the first batch, Baidu Maps obtained the certification for mobile internet app security issued by the China Cybersecurity Review Technology and Certificate Center.



Participated in developing the *Introduction of AI Ethics Risks*

We proposed the four principles of AI ethics and participated in developing the *Introduction of AI Ethics Risks* with the National General Group for Artificial Intelligence Standardization.





Organized more than 50,000 online security training sessions

We organized more than 50,000 online security training sessions, with more than 100 courses developed.

Nurturing talents



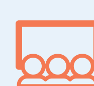
More than 1 million AI specialists

Our training resources were utilized by more than 1 million AI specialists in China.



Women accounts for 42%

Women made up 42% of our staff and 44.6% of our managers.



37.3 training hours

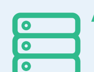
Our employees received an average of 37.3 training hours— a 65.9% rise from 2019.



22 surveys

We launched the Mini Pulse Survey feedback channel. Each of its 22 surveys was participated in by 5,000 to 6,000 employees.

Promoting sustainability



Annual average PUE 1.14

The annual average PUE of Baidu's self-built data centers reached 1.14 in 2020, 76% lower than the industry's average of 1.59[6].



45 million kWh

We purchased 45 million kWh of wind power and generated 293,000 kWh of photovoltaic power via rooftop systems on our data centers.



Over 2,000 tons

In 2020, the total usages of the MaaS Travel Program in Beijing exceeded 1.95 million, with over 2,000 tons of carbon emissions reduced.



Five years

We earned ISO 22301 business continuity management system certification for a fifth consecutive year.

Improving service



Co-published *2020 Cybercrime Report on Blackhat and Grayhat Hacking*

In partnership with the Cyber Security Law Research Center under the Ministry of Public Security, we published the *2020 Cybercrime Report on Blackhat and Grayhat Hacking.*



51.62 billion pieces

We blocked or disposed of more than 51.62 billion pieces of illegal information including pornography and gambling. More than 51.54 billion were blocked by machines and over 80 million manually.



Rejected more than 2.298 billion advertisements

We rejected more than 2.298 billion advertisements that violated laws and regulations, and a total of 28,013 illegal accounts were punished.



92% user satisfaction

We received more than 80 million user feedbacks, earning a 92% user satisfaction.



Four China Patent Awards

Our AI breakthroughs earned four China Patent Awards.



Applied for 9,364 patents

We applied for 9,364 patents and were granted 2,682. These tallies were the highest among Chinese Internet companies in 2020.

Contributing to society



CNY 300 million

We set up an CNY 300 million pandemic and public health fund.



Hundreds of millions of times of AI temperature monitoring

By the end of 2020, our AI temperature monitoring system had been used hundreds of millions of times nationwide.



Helped 11,942 people

By the end of 2020, our interactive platform AI Xunren, which helps find missing or abducted persons, had helped 11,942 people to be reunited with their families.

[6] Data extracted from 2020 Uptime Institute Data Center Survey, https://uptimeinstitute.com/2020-data-center-industry-survey-results

Our management



ESG concept

To enhance the integrity of mobile information and continue to be a leader in AI, we devote time and attention to the needs and demands of stakeholders, including suppliers, partners, governments, social institutions, users, employees, communities, and the environment itself.

We actively explore low carbon operations, sustainable economic indicators, supply chain management, intellectual property, technological innovation, compliance, data privacy, information security, user experience, personnel training, employee rights, and community engagement.

We aim to fully integrate an ESG philosophy and standards into our management, solve social problems with technology, leverage our corporate strength and innovation capability, and contribute long-term, sustainable value to stakeholders and the human community at large.

Our ESG Concept

ESG management

Our newly established ESG Committee comprises senior managers from corporate legal affairs, finance and human resources. They offer sustainable development suggestions to our Board of Directors and formulate ESG goals and action paths based on the concerns of stakeholders and the wider international community. The Working Group under the Committee communicates and implements these ideas.

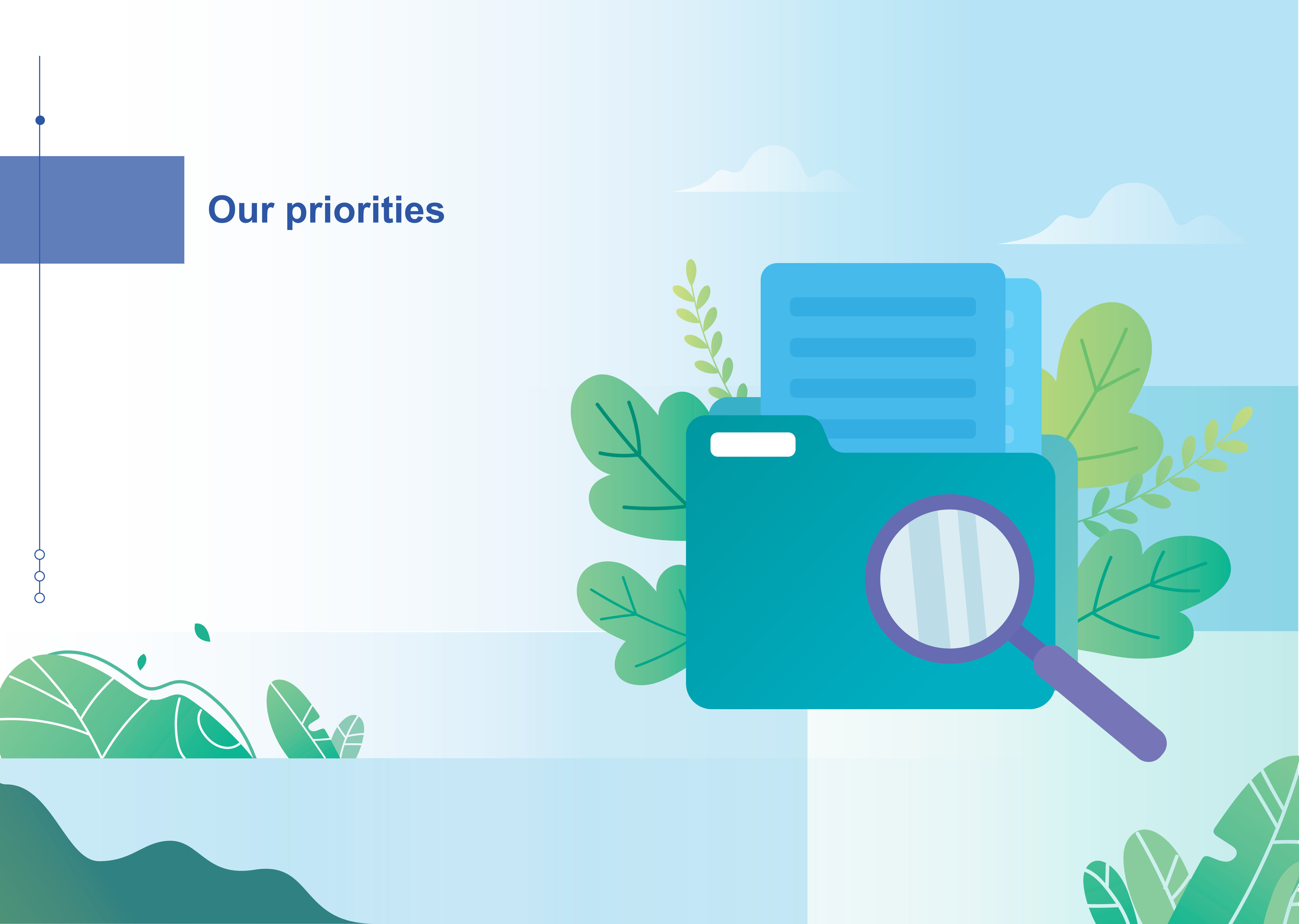
Under the guidance of the Committee, the Working Group coordinates with our business lines and functions to promote ESG work, establish and optimize risk management, and ensure close communication and cooperation with stakeholders. It is committed to enhancing Baidu's ESG performance and, in turn, enhancing our value and competitiveness.



The ESG management structure of Baidu

Our newly formulated *Environmental, Social and Corporate Governance Policy*[7] explicitly factors ESG into our management and business. Setting ESG goals clarifies the management structure and corresponding responsibilities, strengthens communication with stakeholders, and enhances our work in this area.

[7] http://esg.baidu.com/en/detail/347.html



Our priorities

Communicating with stakeholders

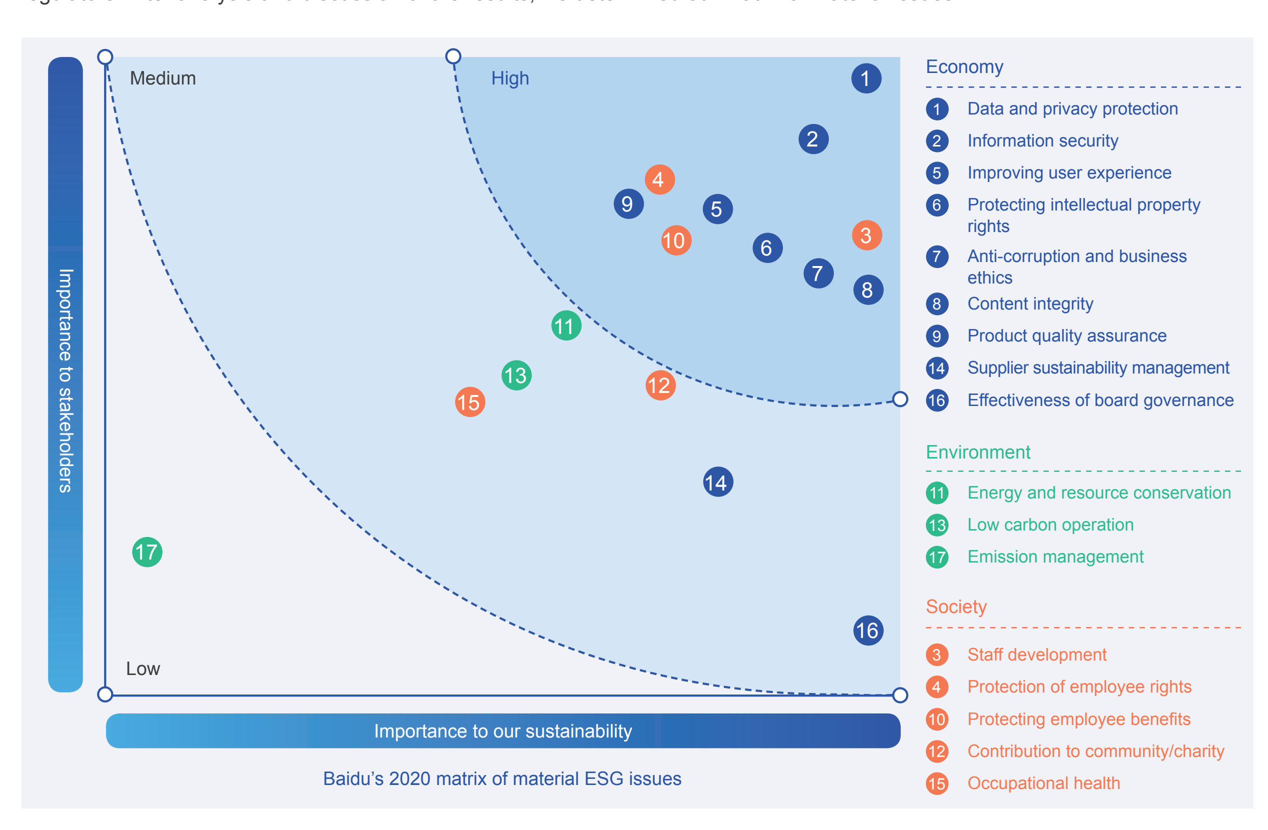
Stakeholders' suggestions are key to our ESG development.

Stakeholder	Means of communication	Expectations and demands
Shareholders and investors	• general meeting of shareholders • periodic reports and announcements • investor emails and conference communication	• continuous and stable growth • compliance • risk management • quality of products and services
Users	• feedback channels • product research • interaction on our website and social media	• improved user experience • information security • data and privacy protection • content integrity • product quality assurance
Governments and regulators	• information disclosure • collaborative projects • routine communication and reporting • supervision and inspection • site visit	• compliance • information security • data and privacy protection • content integrity
Employees	• internal office systems • internal meetings • regular surveys for feedback • online and offline trainings	• protection of rights and interests • training and development • protection of benefits • occupational health and safety
Suppliers	• invitation for bids • procurement • contracts and agreements • supplier management conferences • supplier communication • other communications	• integrity • mutual benefit • empowering suppliers
Partners/NGOs	• Baidu World Congress • Baidu Create • ABC Summit • Baidu Union Summit • project-based cooperation • technology exchange • achievements sharing	• technological innovation • cooperation • product quality assurance • low carbon operation • corporate social responsibility
Media	• press conferences • exclusive interviews • invitations to meetings or events • interaction on our website and social media	• openness and transparency • compliance • information security • data and privacy protection • content integrity • corporate social responsibility
Environment	• energy-saving and emission-reducing technology • green products • raising low carbon awareness among users	• emission management • energy and resource conservation • low carbon operation
Communities	• community activities • interaction on our website and social media	• charity projects • community investment • volunteer activities

The communication mechanism with stakeholders of Baidu

Identifying material ESG issues

In 2020, we identified 17 ESG issues after examining ESG-related industry standards, concerns in the capital markets, and the best practices in the industry, both at home and abroad, as well as our business development trends. Then, we collected feedback from staff, users, shareholders and investors, suppliers and partners, media and NGOs, communities, and governments and regulators. After analysis and discussion of the results, we determined our matrix of material issues:



Baidu's 2020 matrix of material ESG issues

Importance	Issue	Category
High	Data and privacy protection	Economy
	Information security	Economy
	Protection of employee rights	Society
	Product quality assurance	Economy
	Improving user experience	Economy
	Staff development	Society
	Protecting employee benefits	Society
	Protecting intellectual property rights	Economy
	Anti-corruption and business ethics	Economy
	Content integrity	Economy
Medium	Energy and resource conservation	Environment
	Low carbon operation	Environment
	Contribution to community/charity	Society
	Occupational health	Society
	Supplier sustainability management	Economy
	Effectiveness of board governance	Economy
Low	Emission management	Environment

Baidu's 2020 material ESG issues

Our practices



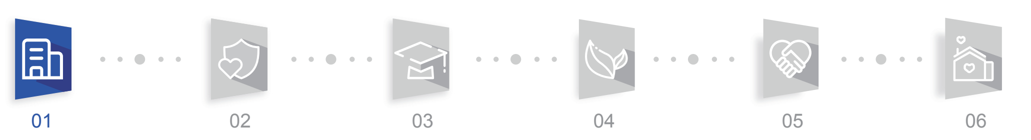
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Enhancing corporate governance

Complying with laws and regulations is part of the foundation for sustainable development. To ensure efficiency and stability, we uphold the highest business ethics, practice risk prevention and control, and maintain sound governance.

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MAKE THE COMPLICATED WORLD SIMPLER THROUGH TECHNOLOGY



Structure of the Board of Directors

Our well-structured and efficient corporate governance has defined rights and responsibilities, in strict accordance with the *Nasdaq Stock Market Rules,* the *United State Securities Act of 1933* and other applicable laws.

As the highest decision-making body, our Board of Directors has an Audit Committee, a Remuneration and Benefit Committee, and a Corporate Governance and Nomination Committee. These guarantee that resources are allocated properly and that decision-making is efficient. The board determines our overall strategies and policies, supervises the management and business performance, and ensures that risk management and internal controls are effective and long-term. These actions safeguard the interests of the company and its shareholders and lead the Company's development. In 2020, we held five board meetings, attended by all five directors.

Baidu believes that its current composition of executive directors and independent non-executive directors is appropriate, which is enough to safeguard the interests of shareholders and the Company. With diverse perspectives and specialized knowledge, they offer independent opinions and judgements that create a balanced approach to business strategy, performance, risk prevention and control, and conflicts of interest.

We highly value the diversity of our board. Members are appointed on merit and we ensure they have the right balance of skills, experience, and perspectives. When nominating candidates, the Corporate Governance and Nomination Committee considers gender, age, cultural and educational background, professional experience, skills, knowledge, and duration of employment. It also regularly reviews and supervises the implementation of diversity on the Board.

In 2020, our board comprised five members, including one executive director and four independent non-executive directors. All have extensive industry experience, including one with a financial risk management background.

Name	Age	Tenure	Board memberships (including Baidu)	Independent non-executive director	Independent of other interest relationships*
Robin Yanhong Li	52	20	4	No	No
James Ding	55	15	2	Yes	Yes
Brent Callinicos	55	5	3	Yes	Yes
Yuanqing Yang	56	5	4	Yes	Yes
Jixun Foo	52	2	4	Yes	Yes

* interest relationships with employees, governments, or shareholders

Details of Baidu's Board of Directors

Risk prevention and control

Sustainable development is impossible without a sound risk prevention and control system. We identify and analyze financial and non-financial risks in our operations, and form an effective risk prevention and control mechanism to assist the Company in achieving long-term stable operations.

Structure of risk management

Our board assesses and determines the nature and scale of potential risks and ensures the integrity and effectiveness of risk management and internal monitoring system.

Baidu has built a top-down structure for risk management to ensure the implementation of concrete work and control processes, including risk identification, assessment, and treatment. Led by the Committee of Sponsoring Organizations of the Treadway Commission, we have established a 'three levels + three lines of defense' risk management framework and clarified risk management and control procedures of risk identification, risk assessment, risk analysis, and risk responses.



Baidu's risk management framework

Risk identification

On the basis of a complete risk prevention and control management system, Baidu carries out regular internal risk analysis and identification. We divide our businesses into different business circulations, based on which we conduct the risk identification and assessment to form a risk map. In response to high-risk issues identified by the risk map, Baidu formulates a one to three-year audit plan to ensure the effectiveness and longevity of risk prevention and control initiatives.

In 2020, we identified risks associated with finance, operations, fraud, network security, and external regulation. For details, please see the *Baidu 2020 Annual Report* [8].

[8] *Baidu 2020 Annual Report* will be available at https://ir.baidu.com/.

Business ethics

The building of business ethics and compliance has always been the focus of Baidu. As a multinational corporation listed in the United States and operating in multiple countries, our business ethics enjoys a legal basis for being in compliance with advanced laws, regulations, and standards from around the world. We internalize those laws, regulations, and standards to form our business ethics system according to Baidu's business characteristics. In China, we strictly abide by the *Anti-Monopoly Law of the People's Republic of China*, the *Anti-Unfair Competition Law of the People's Republic of China*, *Interim Provisions of the State Administration for Industry and Commerce on Prohibition of Commercial Bribery (1996)*, and other laws and regulations directly related to business ethics. We also follow articles in general or laws and regulations that are highly related to operations such as the *Company Law of the People's Republic of China* and the *Government Procurement Law of the People's Republic of China*. Globally, we follow the *Public Company Accounting Reform and Investor Protection Act 2002 (the Sarbanes—Oxley Act)*, the *United Nations Convention Against Corruption*, the *Business Principles for Countering Bribery* (developed by Transparency International in 2003 and revised in 2013), and anti-corruption and anti-bribery legislation in our existing and potential overseas markets.

Internal management

Through long-term development and improvement, Baidu has formed a solid business ethics system.

System building

We consulted and absorbed the *Business Principles for Countering Bribery* introduced by Transparency International, universal standards or requirements developed by well-known international institutions when establishing and improving our anti-corruption policies and systems. At present, we have formed a system consisting of the *Baidu Professional Ethics and Code of Conduct* as basic and fundamental document and other rules concerning business ethics, professional ethics, and anti-corruption issues as specific documents. Furthermore, our business departments at all level have developed their own rules and systems related to business ethics, including the *Baidu Employee Manual*, the *Honesty and Integrity Agreement*, the *Sustainable Development and Corporate Social Responsibility Requirements*, etc. These rules showcase scenarios and details of the above-mentioned fundamental regulations concerning business ethics and broaden the scope of Baidu's business ethics.

Level	Name	Content (abstract)	Applicability
Basic and fundamental	*Baidu Professional Ethics and Code of Conduct*	It expects that employees shall abide by laws and maintain a high degree of honesty and professional ethics in the aspects of employee relations, fighting against the unfair competition, illegal and improper payments, business partners, suppliers and customer relations, confidentiality and protection of company information and property. It sets up a mechanism for reporting violations and countering retaliation and identifies penalties for violations.	All employees, executives, consultants, and board members of Baidu and its branches, affiliates, and subsidiaries

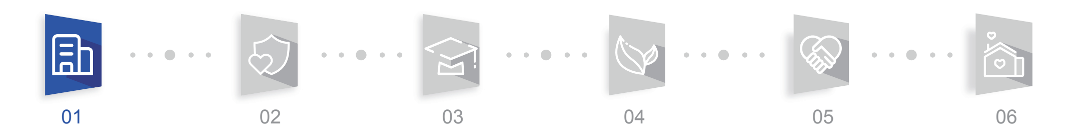
Baidu's basic business ethics system

Level		Name	Content (abstract)
Specific requirements	Definition	*Baidu Management Regulation of Construction of Professional Ethics*	It stipulates six professional ethics; namely adhering to honesty and integrity, avoiding conflict of interest, keeping business secrets, valuing the interests of partners, protecting company assets, and cooperating with investigations.
		Baidu Professional Ethics Regulations on "Red Line" Management	It identified six types of negative behaviors categorized by the company as the red line and intolerable behaviors; namely falsification, solicitation for personal gain, extorting and accepting bribes, leakage of information, conflict of interest, and interfering with investigations.
	Response and Prevention	*Baidu Avoiding Conflicts of Interest Policy*	It establishes two types of reporting mechanisms for conflict of interest and gift and hospitality respectively.
		Baidu Professional Ethics Reporting Management Regulations	It establishes the reporting systems for Baidu employees suspected of violations of laws and professional ethics. And the implementation rules for the protection of whistleblowers were revised in 2020.
	Awards and Punishments	*Baidu Rules for Awarding and Punishing Employees*	It establishes details for rewards and punishments on behaviors related to professional ethics.

Baidu's specific business ethics systems

Level	Departments or systems	Name of regulations
Departmental requirements	HR	*Baidu Employee Manual, Baidu Human Rights Policy,* etc.
	Internal Audit Department	*Internal Audit Charter of Baidu,* etc.
	Finance System	*Baidu Reimbursement Rules for Companies, Baidu Reimbursement Rules for Employees,* etc.
	Sales Business System	*Honesty and Integrity Agreement, Code of Ethics for Sales Practices of Baidu MEG Sale System, Code of Ethics for Sales Practices of Baidu AI Cloud,* etc.
	Procurement Business System	*Management Rules for Suppliers, Supplier Contact Guidelines, Sustainable Development and Corporate Social Responsibility Requirements, Baidu Measures for Supplier Daily Management and Handling Complaints,* etc.
	Other important regulations	*Baidu Management Rules on Undisclosed Information and Prohibition of Insider Trading, Baidu Employee Information Security Manual, Baidu Risk Control Redlines for User Products,* etc.

Baidu's business ethics systems of departments



Governance system

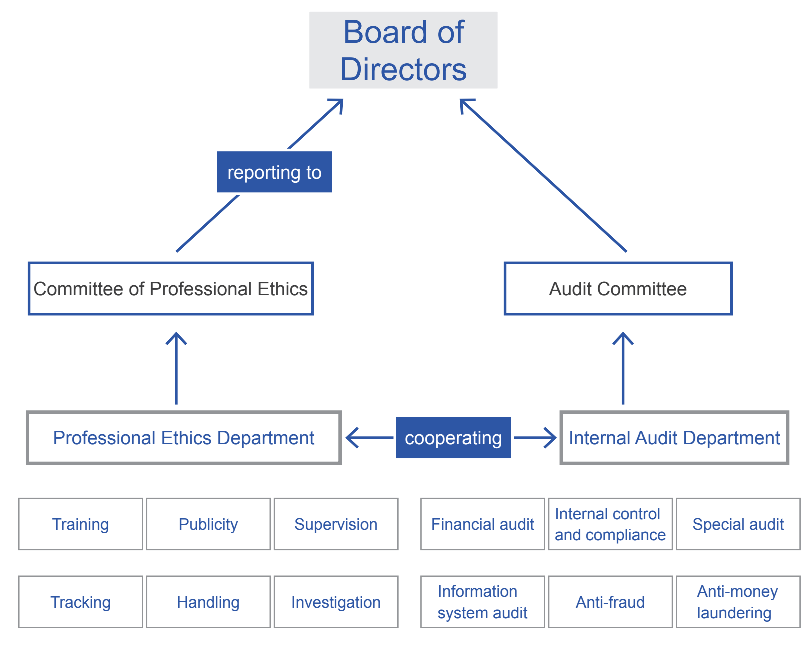
Our anti-corruption organization consists of three levels of management, including the Board of Directors, the Committee of Professional Ethics, and the Professional Ethics Department.

Level	Description	Main functions
Board of Directors	The highest authority with ultimate responsibility for corporate governance	• approves fundamental rules and institutional documents, including the *Baidu Professional Ethics and Code of Conduct* • appoints the Committee of Professional Ethics and has the right to address inquires to the Committee • listens to the work report and proposes advice on handling corruption cases involving corporate executives
Committee of Professional Ethics	The decision-making body at executive level	• consists of three senior vice presidents • responsible for the instruction, decision, supervision, and inspection of the company's professional ethics, code of conduct and business ethics, and reports to the Board of Directors
Professional Ethics Department	Responsible for the routine specific execution of the Committee of Professional Ethics, under the guidance and supervision of the committee and reporting to it	• revises relevant systems of professional ethics and anti-corruption, as well as establishing corresponding mechanisms and processes • organizes education and training activities on professional ethics, code of conduct and relevant systems • investigates and handles cases of suspected fraud and violation of laws or rules of administrative discipline involving employees

Three-level professional ethics governance system

According to the "three lines of defense" risk management framework, the Professional Ethics Department independently exercises its investigative rights following the investigation procedures of case clues, acceptance, investigation, handling conclusions, and follow-up. In 2020, the Professional Ethics Department strengthened its initiatives in supervision and investigation, shifting from investigations following up the clues of cases to more preventive investigation and supervision.

In addition to compliance audit, special audit and other routine audit duties, our Internal Audit Department also assists with investigation of and reports on anti-fraud, anti-money laundering, and related matters. It fully communicates with the Professional Ethics Department before reporting to the Audit Committee in a regular manner. It cooperates with the Professional Ethics Department to enhance our business ethics. The Company's senior management is required to support internal control, compliance, and audit, and should direct the Internal Audit Department's work and listen to the audit results.



Professional ethics and internal audit work content and reporting levels

For ethics violations, Baidu imposes penalties based on the severity of the case. We adopt zero-tolerance policies and have the right to terminate employment contracts for violations of the *Baidu Professional Ethics Regulations on "red lines" management*. If the relevant behavior constitutes a crime, it will then be transferred to law enforcement agencies to handle accordingly. For less severe violations, we issue notifications or warnings, as appropriate. Opinions and decisions on violations are concluded upon joint discussion by the Professional Ethics Department, Legal Department, and Human Resource Department, etc. The decisions are reviewed and approved by the Committee of Professional Ethics to ensure scientific, fair, and effective results.

The Professional Ethics Department itself is under the supervision of all employees and the Board of Directors is entitled to address inquiries about the Professional Ethics Department's work, which is part of the supervision and restriction of the department.

Training and publicity

Baidu carried out a number of training and publicity activities to continuously enhance our internal business ethics and compliance awareness and create a compliance atmosphere.

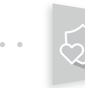
For employees, there are three types of training, namely new employee orientation, regular employee training, and specialized training, ensuring that all staff keep professional ethics in mind. The training covers all regular employees of Baidu. And we keep all the training videos on our internal 'Duxuetang' learning platform for employees to learn at any time.

Training	Content	Coverage and Assessment
New employees orientation	Compulsory courses such as "Professional Ethics and Sunny Workplace"	Freshmen must complete courses launched by the Human Resources Department and pass examinations
Regular employees training	Activities such as the "Baidu Legal Literacy in Progress" once per quarter	The "Professional Ethics and Security Awareness" exam covering all employees adopts the "full-score pass system", which means any people who cannot get full marks shall retake the examination until a full mark is attained
Specialized training	Specialized training is a training or promotion program targeting a specific department, system, or problem. For example, special training for sales team managers of AI Cloud Group (ACG) and Corporate Group Strategy Department	Covers business lines or departments with specific training needs. Employees are encouraged to take the quiz voluntarily

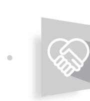
Baidu's professional ethics training

For directors, we introduce Baidu's compliance requirements for professional ethics through the quarterly report of the Professional Ethics Department to the Board of Directors. In 2020, Baidu's professional ethics-related training totaled 1,928 hours.

We have been publicizing business ethics and anti-corruption by permeating employees' daily life in recent years. Through the intranet, the WeChat official account of Infoflow (Baidu's internal communication app), the home page of the projection screen in the meeting rooms, the posters in elevators, the bulletin boards in toilets, and flashcards, we intensively publicize the regulation and information related to anti-corruption.



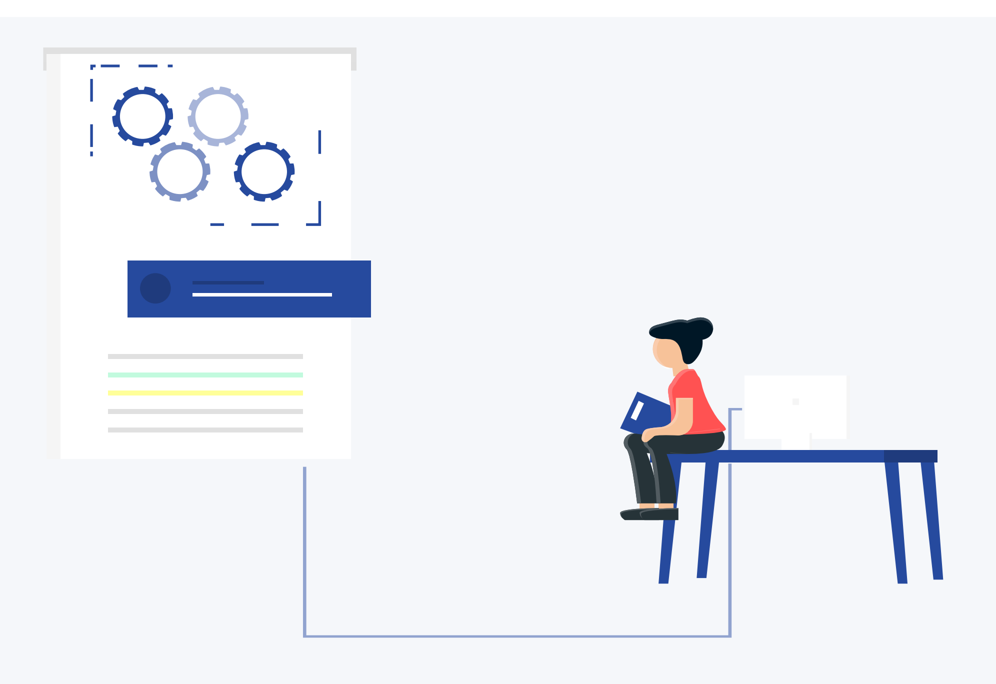

Reporting

In accordance with the *Baidu Professional Ethics Reporting Management Regulations,* we regulate, encourage and support staff and outsiders to report suspected violations of discipline, law, and professional ethics of Baidu employees. We have set up four reporting methods: email, in-person reporting, professional ethics mailbox, and letter. The responsible personnel is required to handle it within 24 hours after receiving the report. We strictly protect the safety of whistleblowers who use our channels, whether staff or outsiders, and ensure they do not receive unfair treatment such as dismissal, demotion, suspension, intimidation, harassment, or any form of retaliation. We ensure the confidentiality of reports and shall keep the details of the informant and the information of the reported case strictly confidential. For example, the reporting mailbox is managed by an authorized team of four people, including the director of the Professional Ethics Department, the director of the Internal Audit Department, an authorized representative from the Human Resources Department, and a case handler, so as to strictly ensure confidentiality of information by limiting the scope of information dissemination. The reporting information from all channels is received, registered, responded to, and reported by a dedicated person, who is also responsible for the confidentiality and management of information. We have also established a reward mechanism for reporting. Reporters who provide valuable assistance in investigating and handling the case deserve a cash reward. In 2020, the Professional Ethics Department received a total of 132 reports involving professional ethics issues. Among them, 37 cases are under investigation and 95 cases have been closed, saving the Company about CNY 17 million in economic losses.

Gift management

Baidu stipulates that employees and their families are not allowed to accept gifts (including but not limited to all kinds of goods, cash, shopping cards, all sorts of valuable securities), services, travel, or hospitality from agents, customers, suppliers, or partners. When given a gift, employees are obligated to explain the company's policy of not accepting gifts and to decline. If they cannot decline a gift in person, they should return it later, and whether or not it is successfully returned, employees are required to report it to the gift and hospitality reporting system truthfully. For gifts that cannot be returned, the recipient shall submit the gift to the Baidu Foundation after reporting in the gift reporting system. The Foundation holds the Charity Auction Day twice a year to sell all collected gifts with all proceeds going to charitable activities.

In 2020, the gift reporting system received 3,119 gifts, and the two online auctions on those items welcomed 4,930 employees, raising CNY 564,000. In this way, we have maintained professional ethics and supported public welfare.



External cooperation

We hope to gradually promote our concept of business ethics to the entire industry and even society, via external supervision and communications, and to help create a good business ethics atmosphere.

Extending cooperation

We actively join excellent industry organizations to strengthen our anti-fraud ability and keep sustainable development by innovation, cooperation and win-win sharing.





Logo of GEIIC

Baidu joining the Guangdong Enterprise Institute for Internal Controls



The Enterprise Anti-Fraud Alliance, or Guangdong Enterprise Institute for Internal Controls (GEIIC), is the only association for enterprise internal control in China. It comprises of 754[9] corporate members[10], more than half of which are public ones. Since its inception in 2013, GEIIC has been adhering to the philosophy of "Building Integrity, Strengthening Internal Control and Opposing Fraud" and focusing on such functional areas as internal audit, supervision, risk control, legal affairs, integrity and compliance.Baidu joined GEIIC in September 2020 and was awarded as a standing member of the Alliance. The Executive Committee voted for the approval of our entry to the Committee for Baidu's significant contribution to anti-corruption. Meanwhile, Mr. Fang Bo — the director of our Professional Ethics Department — was elected to be an executive director at the fourth session of the second executive council of the GEIIC. We will join hands with the association and embrace the vision of "Building an Incorrupt China to Facilitate a Clean World" to cultivate talents and develop standards for the anti-fraud cause in China, as well as to provide Chinese wisdom and solutions to the work worldwide.

Baidu participating in the "Corporate Integrity and Compliance Day" of the Trust and Integrity Enterprise Alliance

The Trust and Integrity Enterprise Alliance[11] was founded in February 2017. It comprises of 500 corporate members, more than half of which are public ones. The Alliance advocates business integrity, builds a healthy and honest workplace, promotes honesty and compliance to jointly create a healthy and transparent business environment. On September 19, 2019, we participated in the first "Corporate Integrity and Compliance Day" initiated by the Alliance. Baidu also joined hands with other members to launch the Corporate Integrity and Compliance Promotion Month Project, during which Baidu carried out activities such as voting for integrity mascots and logos and the independent publicity activity evaluation, displayed the mascot of integrity "Baidu Sunny Bear" and organized a series of internal promotion and training activities themed with "strictly preventing information leakage and jointly building green firewalls".

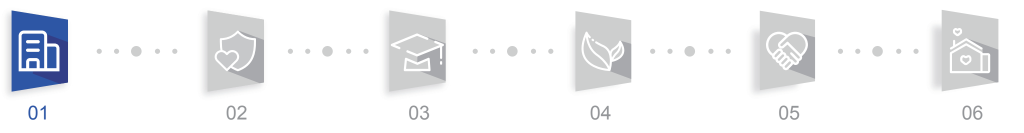


Logo of Trust and Integrity Enterprise Alliance

[9] *As of February 2021*

[10] *Including renowned Chinese companies such as Vanke, Ali, Shimao, China International Marine Containers (CIMC), SF Express, Midea, Country Garden and Fosun*

[11] *The alliance was launched by the Research Center of Criminal Jurisprudence of the Renmin University of China and well-established companies including JD.com, Tencent, Baidu, Wal-Mart China, P&G, Lenovo, Midea, Xiaomi, Meituan, Vipshop, Li-Ning, Yonghui Superstores, and Joy Wing Mau.*



Baidu signing an important statement of the UNGC

In September 2020, Baidu signed *A Statement from Business Leaders for Renewed Global Cooperation* initiated by the UNGC. As an extension of the Ten Principles of the UNGC, this statement calls for intensified global cooperation to address future challenges in a particular international context, including "demonstrating ethical leadership and sound governance through values-based strategies, policies, operations. and relationships with stakeholders". It also calls on governments to "promote multilateralism and global governance to combat corruption, build resilience, and achieve the SDGs".

Cooperating with industry partners

We actively participate in our industry's anti-corruption communication and cooperation. Since 2012, the integrity departments of Baidu, Alibaba (China) Technology Co., Ltd, and Shenzhen Tencent Computer Systems Company Limited (BAT) hold the "BAT Integrity Work Exchange" annually. With this mechanism, the three leading Internet companies set themes each year to regularly share their experience and discuss issues on establishing internal integrity. In 2020, Baidu conducted an exchange forum on anti-corruption with Xiaomi Inc. These thematic exchanges between industry players have not only provided Baidu with knowledge about public governance of industry compliance, but also helped Baidu and other companies to build a joint "firewall" for the top companies, leaving no space for corruption to create or exploit compliance loopholes in the industry.

Cooperating with government

In 2020, with the revision of the *Anti-Monopoly Law of the People's Republic of China,* the State Administration for Market Regulation issued the *Public Comments Requested on the Draft Guidelines for Anti-Monopoly in the Field of Platform Economy.* The importance of "strengthening anti-monopoly and preventing the disorderly expansion of capital" was emphasized at meetings of the CPC Political Bureau and the Central Economic Work Conference. Anti-monopoly in the Internet industry is imperative. As a leader in China's Internet industry, we actively cooperate with regulators at all levels to strictly prevent vicious competition, hindering competitors, restricting the market, abusing monopoly status, and being driven by "quick money" and "great profits" during operations.

Managing the value chain

We adopt the concept of full value chain management and control. We incorporate supply chain risks in risk identification, prevention, and control. We stipulate the ethics that we require in our suppliers, and strictly manage the supply chain.

Baidu has formulated several internal management policies, such as the *Management Rules for Suppliers* and *Baidu Measures for Supplier Daily Management and Handling Complaints,* which covers supplier selection, access and elimination, evaluation, rating, and communication and feedback, and implemented hierarchical management of suppliers to fully guarantee scientific and effective procurement and supplier management. In 2020, we revised the *Management Rules for Suppliers* to require a part of performance-tested suppliers to develop internal systems related to anti-corruption and to incorporate this requirement into the performance assessment system for such suppliers.

Baidu carries out fine management throughout the entire process of cooperation with suppliers and regulates centralized procurement and independent procurement processes to minimize supply chain risks. We have formulated the *Procurement Management System and General Rules on Operation,* which stipulates that after confirming procurement, a detailed purchase order must be signed with the supplier. This order then should be submitted for approval by our Legal Affairs Department, our Finance Department, and other related departments in the second line of defense. Our Finance Department initiates payment only when approval is completed.

We strictly control the risk of corruption in the certified process and formulated the *Sustainable Development and Corporate Social Responsibility Requirements for Partners* targeting suppliers and agents. We require Certified suppliers (Suppliers with which Baidu has reached long-term and frequent cooperation. They are the majority of Baidu's suppliers, which are mainly categorized into marketing suppliers and equipment and O&M suppliers. The former covers public relations, media monitoring, design and production, meetings and activities, business trips, promotion activities, market research, communication channels, goods marketing, content production, media placement; the latter covers servers, network equipment, computer room O&M, human resources outsourcing, computers, and other relevant equipment). to comply with the *Procurement Department Code of Practice for Offline RFQs* and *Supplier Quotations and the Supplier Contact Guidelines,* which regulate practices regarding quotes, price comparisons, and suppliers' interaction with Baidu employees and their relatives.

We provide anti-corruption training and awareness-raising for suppliers at management and exchange meetings, and urge partners to actively comply with relevant ethics and market rules with our *Honesty and Integrity Agreement* and integrity clauses in our contract. We do not permit cooperation with external agencies that have participated in violations such as monopoly and fraud. Currently, an anti-corruption assessment is included in our evaluation and review of certified suppliers.



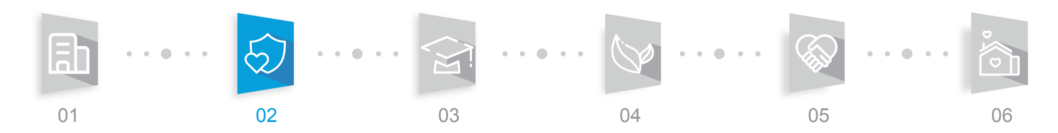
II Building trust

Data security is paramount to Baidu. We have rigorous internal security management systems and regulations and have harnessed our technological capabilities to comprehensively guarantee cybersecurity and data privacy.

In 2020, we continued to explore innovative technologies. We shared our achievements in cybersecurity and data privacy with the industry, and helped build industry-wise security. We also upheld the idea of “responsible AI” and promoted enhancements in AI ethics.







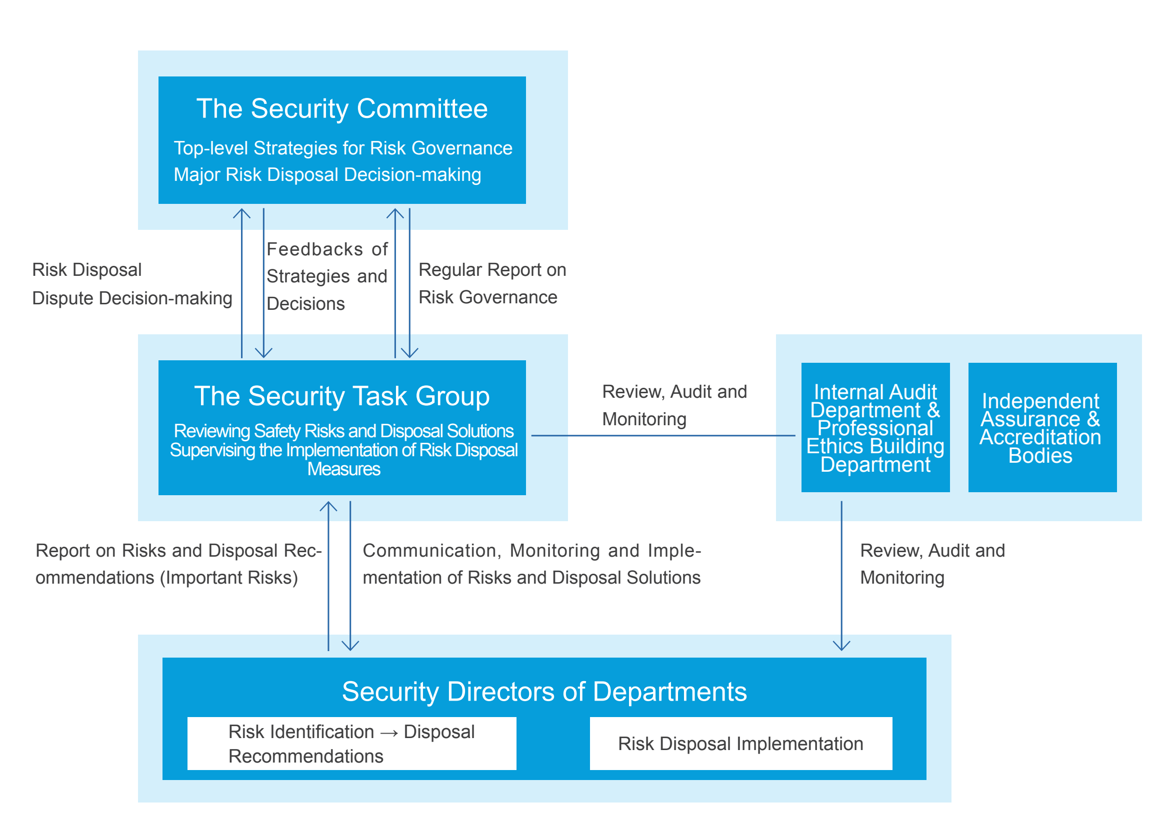
Cybersecurity

To consolidate the network information security infrastructure, Baidu optimizes its internal security management structure, improves its security operation capabilities, and establishes a multi-layered defense system for network abnormalities and security incident response procedures, which can effectively prevent internal information leakage. Also, it actively participates in the formulation of industry safety standards and shares safety technology achievements, contributing to the construction of a security ecosystem in the industry.

Security management

Baidu strictly follows the *Cybersecurity Law of the People's Republic of China* and other applicable laws and regulations. Internally, Baidu established multiple regulations, including the *Baidu Information Security Redlines,* the *Baidu Information and Product Security Punishment Measures, Baidu Office Network Security Policies, Security Standards for Application Acquisition and Outsourced Development,* and *Baidu General Principles for Handling Security Issues.* These regulations and rules cover security redline, office security, basic security, data security, and privacy, product security, third-party cooperation security, security management, and other aspects. Our company-wide policies apply to all our branches.

Baidu established a three-level security structure, consisting of the Security Committee of Baidu, the Security Working Group, and heads of security departments, giving each organization clear responsibilities for securing the network. As the top-level security organization, the Security Committee of Baidu is responsible for risk control, decision-making, resource investment, and team coordination in information, product, data, and personal information security.



Organization structure of security assurance

Three-unit action	Main responsibilities
Basic defense	As the executive party and the first responsible party of Baidu information and product security, the heads of departments are in charge of security of their departments and are also responsible for implementing the company's information security-related strategies and measures.
Penetration testing and deterrence	As the security risk prevention and monitoring party, the security working group composed of the Security Department and other departments is responsible for coordinating security work at the company level and reporting to the Security Committee of Baidu regularly.
Inspection and internal audit	Based on the status quo of the company's information security management, the Internal Audit Department and Professional Ethics Department carry out audits and inspections for major information security risks. They are responsible for receiving, investigating, and dealing with security issues that involve violation of professional ethics and the company's information security-related policies and procedures.

Baidu's three-unit action security

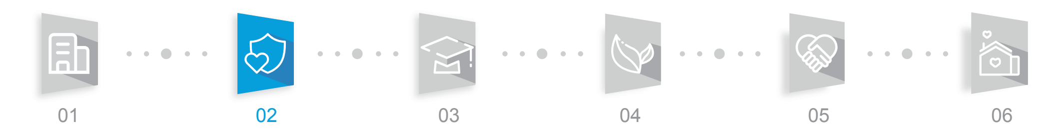
Security operation

To improve our emergency response capacities, protect the rights and interests of the company and users, create a safe and stable network, and ensure that cybersecurity incidents are handled efficiently, we have a multilayer, whole-chain defense system.

Product security and quality	Baidu is a practitioner of DevSecOps[12] security concepts and can provide solutions with full chain security in terms of the full life cycle of Baidu's product development and development tools. Through security collaboration, security front, security automation, and other measures, we can improve the efficiency of R&D and guarantee the security and quality of Baidu products in all aspects of product requirements design, coding, testing and launch.
Security preplan and drill	Organize regular security drill to ensure key stuff to effectively deal with security incidents, such as system vulnerabilities, network attacks, and network intrusions.
System risk identification	Conduct penetration testing to identify the defects and risks of the existing systems.
Monitoring alarms and blocking	Monitoring and alerting of basic security and defense-in-depth threat detection capability can timely block anomalies and attacks.
Abnormal behavior tracing	Detect and audit core end-to-end data use behaviors as well as tracing abnormal behaviors.
Safety warnings and labels	Identify security status with risk warnings of websites that may be hijacked, maliciously tampered with, have unstable access and other abnormalities to avoid risks to users.

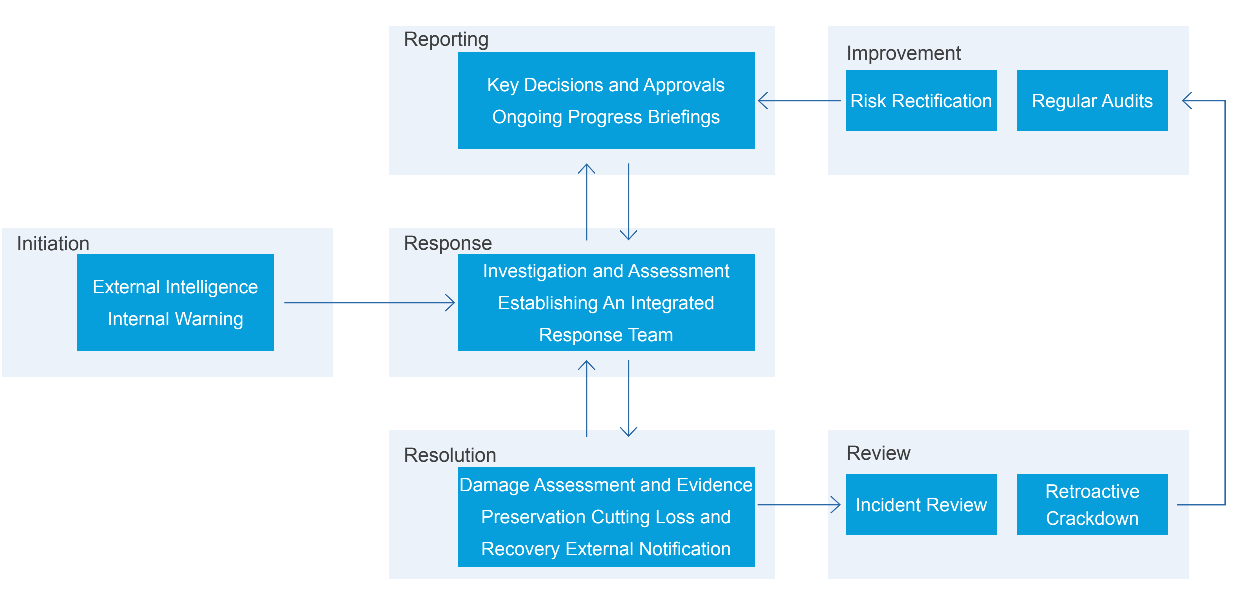
The multi-layer defense system for network anomalies

[12] DevOps Standard, also known as "the DevOps Capability Maturity Model", is led by the China Institute of Information and Communications and jointly formulated by domestic or international experts from top enterprises and institutions in this industry. By far, it has officially been established in ITU-T, a standard organization directly under United Nations. DevOps Standard covers various assessments such as agile development management, continuous delivery, technical operation, application architecture, security and risk management, systems and tools. DevSecOps is the integration of security into emerging agile IT and DevOps development as seamlessly and as transparently as possible.



Security incident response is an important part of security. Baidu has established a set of standardized security incident management processes and contingency plans for security incidents that affect data security and have or may have an impact on personal information, such as initiation, response, reporting, mitigation, resolution, forensic analysis, and notification.

Depending on the specific nature of the security incident, the response roles involve several specialist departments and teams of experts, adhering to the fundamental principle of "eliminating or mitigating the negative impact of the risk on the organization, the business, and the user or customer in the shortest possible time". Based on its impact, range, and controllability, the cyber incident can be classified into level one, level two, and level three from high to low.



Baidu's process of security response

Raising awareness

In 2020, we established a multidimensional training mechanism for information security covering all staff (including regular employees and informal employees such as interns and subcontractors). With training and attack and defense drills, we have consolidated and enhanced employees' information security awareness and skills.

Security training

At least once a year, all employees undertake compulsory security awareness exams. These are tailored to the needs of different positions and can only be passed with full marks.

We also hold security promotion months for all employees to popularize safety knowledge, improve safety skills and create a corporate safety culture. The activities include online interactive games and special quizzes to promote safety knowledge in a scenario that is fun and educational.

The Baidu Institute of Technology and security departments of Baidu host security technology training and conduct special sessions for experts at different levels. The training is mainly in the form of offline lectures, supplemented by online live broadcasting, in an effort to reach a wider group of employees through multiple channels and continue to improve business security capabilities. In 2020, we organized more than 100 online courses, whose sessions were accessed over 50,000 times.

Contingency drills

Baidu regularly conducts network penetration tests to raise security awareness for all employees. The drills simulate external attacks to test employees' defense capabilities, enhancing their security awareness in a targeted manner.

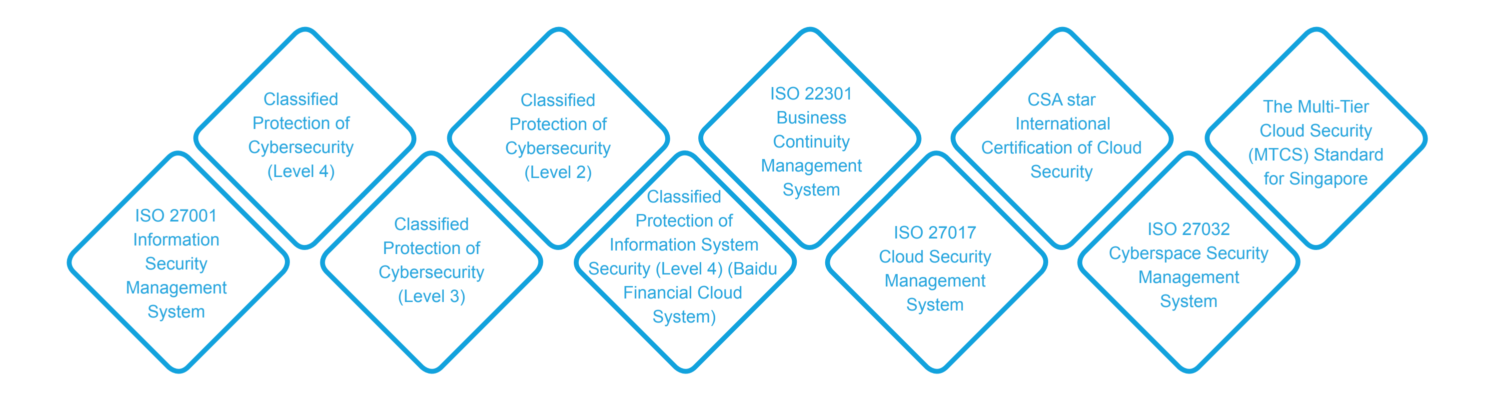
In 2020, we conducted two such drills, focusing on phishing and ransomware emails, which have improved identification abilities of employees for common types of attacks.

Security audits

Baidu conducts security-related regular audits and third-party authentication and evaluation to achieve the comprehensive oversight of information security and data privacy protection.

The Internal Audit Department of Baidu carries out special audits on user privacy protection and data security, identifies defects and problems with risk warnings, and performs tracing audits on abnormal access behaviors. An independent and professional third-party security agency will conduct a double-blind test[13] or a blind test[14] annually under the premise of complying with moral ethics to test the weakness and operational effectiveness of the security defense and response system.

We hold the following international and domestic cybersecurity certifications:



Baidu's certifications in information security

[13] The assessment and testing method that does not provide any testing information to the observer or notify the subject of the time, locations, and assessed contents in advance.

[14] The assessment and testing method that does not notify the subject the time, locations and assessed contents in advance.



Security technology and application

Baidu empowers cybersecurity with AI technology. We consider security issues from the three dimensions of **security**, **safety**, and **privacy**, and apply AI technology to safeguard the entire ecosystem.

Three dimensions of the AI ecosystem

01 Security: Resolving misjudgments of AI system caused by attacks from physical and digital world.

02 Safety: Avoid negative impacts on model classification and prediction that caused by variable environmental factors, such as lighting, space, clarity, noise, and weather.

03 Privacy: Personal information protection covering the full life cycle of data collection, processing, circulation, and calculation.

Three dimensions of the AI ecosystem

Information security of Apollo vehicles

Information security is an ethical challenge and also a barrier that must be overcome by self-driving technologies. Focusing on the key technologies of autonomous driving, Baidu has attached great importance to potential security risks. The core goal of Apollo information security defined by Baidu is "defending external intrusion, preventing leakage of core applications and private data, safeguarding vehicles' control system".

The Baidu Apollo Automotive Information Security Lab focuses on the analysis of automobile cybersecurity technology and its latest trends, covering more than 10 aspects of the automobile cybersecurity area, such as data privacy protection and Signal Spoofing Resistance Test for Autonomous Vehicles. We apply AI technologies in building a full life cycle of a "detection-protection-response-recovery" informational security system for intelligent connected vehicles. Meanwhile, we concentrate on technological protection, data management, and policies and standards while accommodating protection for user's driving data and personal information, and preventing the vehicle from being attacked or controlled by hackers.

In July 2018, Baidu released the *Apollo Pilot Safety Report*, China's first safety report on autonomous driving for volume production, collaborating with partners in the ecosystem to relentlessly promote the safe development of autonomous driving industry in China. Besides, Baidu released the white paper of *Safety First for Automated Driving*. This focused on the protection of the information security of autonomous vehicles and the standardization of autonomous driving.

Construction of the security ecosystem

We always adhere to the idea of "win-win cooperation and open-source sharing", actively conducting research, supporting standards and industry alliances to promote the formulation of cybersecurity standards and improve the overall security level of the industry. We also invest in training outstanding security professionals.

Engaging in industry alliances and industry standard formulation

Baidu has joined ISO/IEC JTC1[15], ITU-T[16], IEEE-SA[17], TC28[18], TC260[19], CCSA[20], and CCSA-TC601[21], and other domestic and international standard organizations successively. In November 2017, Baidu, along with Huawei and China Academy of Information and Communications Technology (CAICT), launched the Open AI System Security Alliance (OASES), working with industry partners to promote a secure ecosystem.

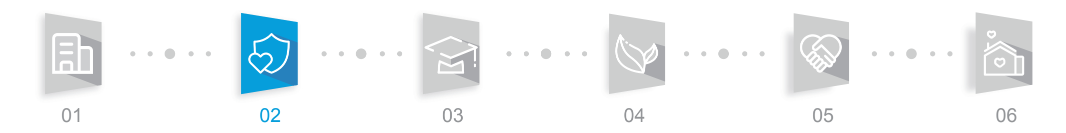
Under the organization of the National Information Security Standardization Technical Committee (TC260), Baidu was involved in developing over 30 national standards, including *Information security technology — Evaluation specification for personal information security in mobile internet applications, Information security technology — Basic specification for collecting personal information in mobile internet applications, Information security technology – General requirements for security of internet information services, and Information security technology — Cyberdata process security specification.* These standards cover a wide range of Network security fields, such as AI security, fighting network underground industry, App privacy compliance, data security, and privacy protection. As a member of CCSA-TC601, Baidu has been actively participating in developing *Data Asset Management White Paper, Big Data Service Capacity Maturity Model, White Paper on Management Practices in Data Standards,* and many more white papers and standards for the big data area.

Security professional training

Technological talents are the core driving force for innovation. We nurture talent by cooperating with universities and scientific research institutions to build international exchanges and cooperation platforms. For example, we co-hosted DEF CON China, gathering global security experts, researchers, and enthusiasts to promote outstanding security talents at home and abroad.

In recent years, the Baidu Security Response Center (BSRC) has hosted galas, conferences, student cybersecurity skills competitions and other exchange activities. The center, together with 41 major security response centers in China, launched the DEF CON CHINA volunteer program, providing a platform for the next generation of cybersecurity talents. Meanwhile, the Baidu Security Response Center also introduced several vulnerability rewards programs and a smart device security crowdsourcing challenge for new scenarios and risks in the AI era, with a maximum prize of CNY 1 million for high-quality vulnerabilities.

[15] International Organization for Standardization/International Electrotechnical Commission
[16] International Telecommunication Union — Telecommunication Standardization Sector
[17] The Institute of Electrical and Electronics Engineers Standards Association
[18] China National Information Technology Standardization Technical Committee
[19] China National Information Technology Standardization Technical Committee
[20] China Communications Standards Association
[21] China Communications Standards Association — the Big Data Technology and Standard Committee



Privacy protection

We always put the interests of users first and behave within the legal red line and the limits of privacy protection. We constantly strengthen the coordination role of the Data and Privacy Protection Committee and improve our comprehensive protection mechanism for products, technology, and systems. This fully integrates data privacy protection into every product and service, guarantees users' right to know, choose, and control personal information. It strives to ensure users feel their "information is protected, choices are respected, and services are valuable".

Baidu's four principles in privacy protection

Informed consent	Baidu Apps will notify users explicitly and clearly of the purpose, method, and scope of personal information collection, and ensure that users fully understand the data processing rules of Baidu's software before giving consent and authority. Meanwhile, we provide users with an in-depth understanding of data processing through user-friendly page designs in certain innovative scenarios. If personal data sharing involved, Baidu will process the data within the authorization scope of users as we protect users' right to know in compliance with laws and regulations.
Data minimization	Baidu ensures that personal data shall be adequate, relevant, and limited to what is necessary concerning the purposes for which they are processed.
User experience	Baidu strives to simplify information management tools and options. We display various controls to users such as information editing, permission and authorization, account association, and account cancellation to optimize users' experience.
Security assurance	We strictly observe the *Baidu Data Security Strategy* while focusing on Privacy by Design (PBD) and Privacy Impact Assessment (PIA) to build a consistent assessment mechanism. In terms of technology tools, Baidu uses desensitization, encryption and differential privacy protection, and other technical means to achieve data de-identification and protect private data during data processing. Moreover, in light of the processing of users' sensitive personal information, Baidu has achieved accurate personal identity authentication and access control at all levels including system, storage, and service.

Baidu has established a top-down management system of privacy protection with the Data and Privacy Protection Committee at the highest level. On the one hand, it is responsible for making strategies and decisions on major data privacy issues. On the other hand, it monitors the compliance management of user data protection and cross-border data, ensuring that our data privacy-related measures comply with international treaties and national laws and policies.

Baidu has developed regulations including the *Master Privacy Policy, Baidu General Compliance Principles on Users Personal Information Protection, and Desensitization Standards for Personal Information.* Baidu has formulated exclusive privacy policies for its products and services, such as Baidu Maps, Baidu Netdisk, Baidu Tieba, and Baidu Input. These data privacy protection policies are enforced throughout the Company, covering all branches.

Our philosophy is governed by our customers' rights.

Right to know	Right to choose	Right to control
Users have the full right to know and can have sufficient communications with us on our privacy rights, clearly understanding the purpose of Baidu's collection of personal information, without feeling their privacy being compromised.	Users can choose whether or not to provide personal information. Our platforms will only collect information with user authorization and will never collect it forcefully. When the purpose, method, or type of personal information processing changes, users can re-select whether to use the function through the pop-up prompt or the corresponding management page.	Users may turn the authorization buttons on or off to grant or withdraw their consent at any time. The authorization control is usually designed to appear on the product pages and is easy to operate. At the valid request of the user or upon expiry of the retention period of the information, Baidu will delete the user's personal information or stop processing the personal information in accordance with the law.

A one-stop account management platform for users

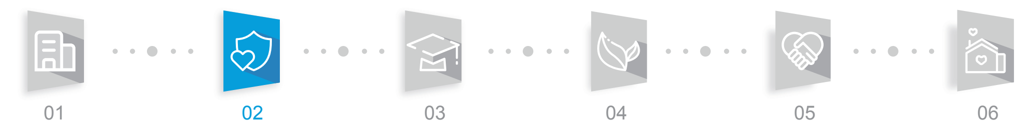
Baidu provides users with a one-stop account management platform (https://passport.baidu.com/) that gives them full control of their accounts. While using our products, users may edit their basic information, change passwords, add security information, add associate accounts and perform other operations through the one-stop account management platform.

At the level of our company's overall data construction, Baidu established the Data Asset Management Committee. The members of the committee are representatives of the Big Data Department, the Security Department, the Legal Department, and other lines of business such as the searching business line. The Data Assets Management Committee is responsible for the formulation, release, and decision-making of policies, management rules, mechanisms, and processes related to data assets.

Baidu has developed a framework of data asset management specifications covering the entire product-service life cycle. The framework covers multiple institutional regulations in data governance policies, data permissions, metadata, data circulation, data value evaluation, data security, and data compliance, including *Baidu Management Rules for Data Permission, Baidu Metadata Standards,* and *Baidu Best Practices for Data Quality Governance.*

Privacy protection technology and application

Baidu applies a variety of access control and privacy enhancement technologies to the entire life cycle of data collection, storage, processing, usage, and distribution to protect user privacy while releasing data value. We have independently developed and applied for a number of patents on data privacy protection, and implemented them in many Baidu applications to effectively protect users' privacy.



World's first universal secure computing platform—MesaTEE

Baidu Security released MesaTEE, the world's first universal trusted secure computing service framework, to provide next-generation data privacy protection solutions for the big data and AI industries.

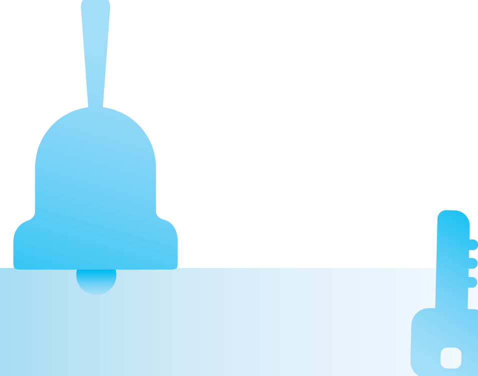
In 2019, the MesaTEE open-source project officially became an incubated project of the Apache Foundation. MesaTEE aims to promote the development of a universal secure computing ecosystem with open source. It addresses cross-departmental and inter-company data exchange or multi-party computation, provides privacy-protected blockchain and cloud services for sensitive businesses such as finance, accounts, and medical care, protects the information security of autonomous driving, and provides trustworthy and assuring basic support for the technological productivity revolution brought about by big data and AI.

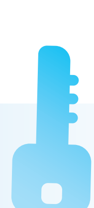
In June 2020, the MesaTEE Universal Secure Computing Platform passed the capability evaluation of big data security products and was awarded the 10th Batch of Big Data Product Competency Assessment Certificate by CAICT.

The security and privacy compliance platform supporting privacy protection

The newly launched Security and Privacy Compliance Platform is the industry's first compliance risk detection and governance system for Apps' collection and use of personal information. And it has already been used by multiple regulatory authorities. It helps App development and operation companies comply with national and industry security standards and regulations, accurately identify and detect privacy compliance risks in privacy policy texts, in Apps' collection and use of personal information, supports the protection of app user's rights, and achieves alignment between detection capabilities and regulatory requirements. It facilitates self-inspection and rectification and protects user privacy.

By now, Baidu's major Apps and SDKs have completed the access and internal testing of the Security and Privacy Compliance Platform.



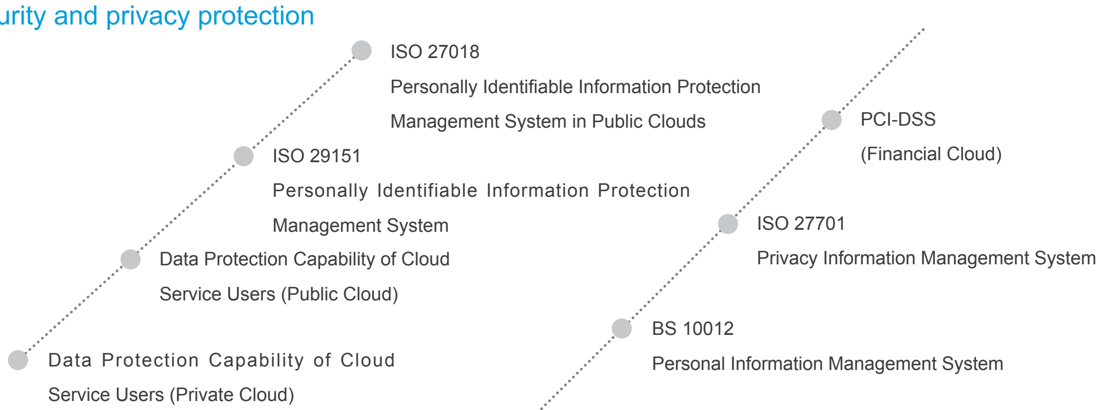


The Giano platform enhancing access control

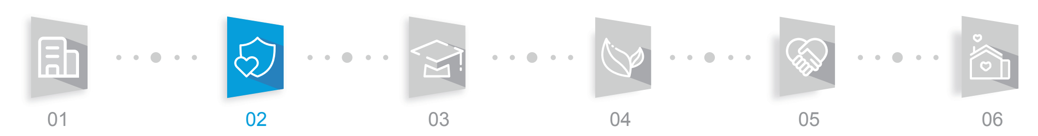
To solve complex internal business and data security issues, we independently developed Giano, a large-scale business-level access control security platform. Its core security functions include secure login and authority management, fine-grained centralized identity management, and 3A access control for authentication and auditing.

Privacy protection certifications

In recognition of our high privacy protection standards, our products and services have obtained a number of international authoritative certifications.







Responsible AI

Artificial intelligence (AI) has witnessed the rapid development in recent years. In response to legal and ethical controversies, the National Governance Committee for the New Generation AI published the *Governance Principles for the New Generation Artificial* Intelligence: *Developing Responsible Artificial Intelligence,* proposing the theme of "Responsible AI". These integrate ethical thinking into AI technology to avoid risks. We actively respond to this theme, deepening the interpretation of AI ethics, actively participating in the formulation of AI ethic standards, and guiding the direction of AI technology.

We join hands with stakeholders such as netizens, industry associations, scientific research institutions, and social organizations to promote the construction of a responsible AI ecosystem.

AI ethics

As AI technology develops and promotes social innovation, the ethical and moral thinking behind its technology has become a core issue of social concern.

Baidu Chairman and CEO Robin Li proposed the four principles of AI ethics. AI should be "safe and controllable", which is the highest principle; AI's innovative vision is to promote more equal access to technologies and abilities for humanity; the value of AI is to empower mankind to learn and grow instead of surpassing and replacing mankind; the ultimate ideal of AI is to bring more freedom and possibilities to humankind. These four principles aim to establish concepts and rules that the whole society follow in terms of all new AI products and technologies, so as to enable the co-existence between AI and humankind. Only by adhering to the highest principle of "safe and controllable", establishing sound AI ethical norms, and accelerating the implementation of AI ethical principles can we use AI technologies to achieve multi-governance, benefit more groups, and realize sustainable social development.

We strive to avoid the negative aspects of AI and the information cocoon, promoting the well-ordered development of AI.

The AI ecosystem

Baidu adheres to the ethical principles of human-centered AI. Regarding AI ethics and standards, we followed proposals related to standardization and joined in the preparation of the *Introduction of AI Ethics Risks* by the National Artificial Intelligence Standardization General Working Group. Baidu also collaborated with CAICT in formulating the *Research Report on Privacy and Security of Facial Recognition Technology in Applications* and participated in the development of Internet of *Vehicles Service —User Personal Information Protection Requirements.*

In terms of international exchanges, we have actively joined in the AI for Sustainable Development Goals (AI4SDGs) research plans and international cooperation networks while funding their research projects, actively promoting the training of talent and the leveraging of technology in the AI area to build global consensus.

Believing "Everyone Can AI", Baidu is encouraged to open-source AI-related technology tools, so every developer can access the world's most advanced AI technologies and the whole society can use the technology more easily. We embrace innovation with an open mind, empower industry with a win-win attitude, and continue to contribute to the flourishing development of the AI field.



Open-source PaddlePaddle empowers communities

PaddlePaddle, based on years' deep learning technology research and business application of Baidu, is the first self-developed industry-scale deep learning platform in China with full functions and open sources. It integrates core training and inference of deep learning frameworks, basic model libraries, end-to-end development kits and abundant tools. It can continuously lower the threshold for learning so that developers and enterprises can implement their ideas about AI safely and quickly, which provides a solid foundation for the large-scale development of the AI industry.

At the Baidu Deep Learning Developer Conference Wave Summit 2020 held on December 20, 2020, PaddlePaddle unveiled its newest PaddleHelix Propeller Bio-computing Platform, the first general heterogeneous parameter server architecture in the industry. Its open-sourced algorithm library is comprehensively updated with the number of official algorithms extending from 140+ to 200+. The number of PaddlePaddle hardware ecosystem partners has reached 20, with 30 chip/IP models adapted or in the process of being adapted, leading the domestic industry. Baidu will continue to build the hardware-software integrated AI-technology base that is independent and controllable, accelerating the construction of the AI industry ecosystem.

Up to now, PaddlePaddle has seen a strong adoption of over 2.65 million developers, including more than 5,000 contributors to its open-source community. After rounds of selection, 97 outstanding developers have become PaddlePaddle Developers Experts (PPDE). Moreover, there are seven special interest groups (PPSIG) founded by PaddlePaddle and 132 city-level or college-level self-organizing communities across the country that take the initiative to hold PaddlePaddle community events.

In terms of industrial applications, around 100,000 enterprises have used PaddlePaddle to create more than 340,000 models in various sectors such as finance, educational training and transportation.

For talent cultivation, PaddlePaddle's training programs for teachers cover 500 universities and support over 200 universities to offer AI courses with credits. Its AI competitions attracted contestants from 580 universities in 22 countries across five continents worldwide. Due to the pandemic, PaddlePaddle has increased the investment in online courses since 2020. A total of 2.9 million people has participated in 176 online courses provided on the AI Studio learning and training platform.



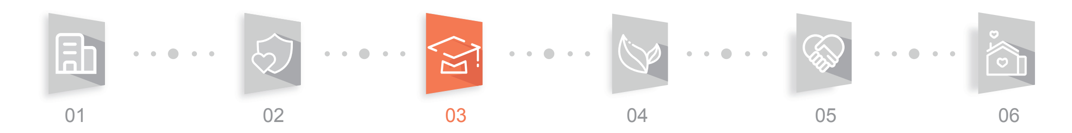


Nurturing talents

We regard talent as our most important asset. Our human resource philosophy is to "recruit the best people, maximize their potential, look at their achievements, pay for the value creation, and let the outstanding stand out".

We combine diversified recruitment channels, multiple training programs, smooth communicating mechanism, competitive salary strategy, scientific performance evaluation, and extensive non-salary benefits to continuously cultivate, attract and retain talent.





Talent assurance

Human resources are the fundamental driver of business development. Baidu has been continuously exploring in talent pipeline development, talent recruitment, and talent training, contributing to talent development.

Talent pool strategy

To reserve Baidu AI talents and support the national AI education training and the long-term talent reserve, Baidu practices the idea of AI empowerment, education first, and unites the government, enterprises, universities, research institutes, and other authoritative institutions to establish an AI talent cultivation ecosystem, in which students, professors, and developers can communicate mutually, by means of the industry-university-research collaboration, elite class, teaching empowerment, competition for learning, scholarship, etc. By the end of 2020, Baidu had cultivated over one million AI talents in China.

Industry-university-research collaboration

To bridge the gap between practice and theory, we have supported comprehensive strategic cooperation covering technology, products, platforms, and talent training with universities and research institutes such as Xi'an Jiaotong University, University of Science and Technology of China, Nanjing University, University of Chinese Academy of Sciences, and Zhejiang University.

Contestants from Big Data & AI Elite Class won at the 2020 Belt and Road International Big Data Competition

Baidu, together with Xi'an Jiaotong University, has run the Big Data & AI Elite Class since 2016, a unique university-enterprise cooperation program that recruits top students and develops them into high-level AI specialists through tailored courses.

In 2020, the whole Class participated the International Big Data Competition, standing out from more than 3,000 teams from 580 universities in 22 countries. The Elite Class sent 16 teams, among which 10 teams won the international grand prize, fully demonstrating the fruitful training model of the Elite Class.



Academician Zheng Nanning, Secretary of Party Committee of Xi'an Jiaotong University Zhang Maizeng, and CTO of Baidu Wang Haifeng present the awards to the winners

To strengthen the docking and coupling of various links in technological innovation, Baidu has maintained deep cooperation with major universities and research institutes in scientific research and resource sharing. Baidu has invested millions of CNY in the scientific research funds to support more than 200 industry-university-research projects through the "Pine Cone" Program, and has cooperated with more than 400 universities in the PaddlePaddle deep learning courses. In 2020, Baidu "Pine Cone" program was officially upgraded to CCF-Baidu Open Fund (hereinafter referred to as Open Fund). It is committed to building a platform for Industry-university-research collaboration and academic exchange for young scholars from universities and scientific research institutes at home and abroad and creating an AI Technology Ecosystem in China. In 2020, through one year of open and semi-open projects, Open Fund focused on scientific research and application, which provided millions of research funds, as well as multidimensional support and services in platform, data, and technology, which worth tens of millions of CNY.

Promoting learning through competition

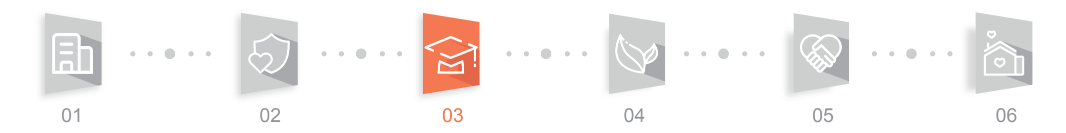
By organizing industry-influential competitions including Baidu Star (Astar), China Collegiate Computing Contest — Artificial Intelligence Innovation Contest, and International Knowledge Center for Engineering Science and Technology (IKCEST), we helped foster a continuously growing pipeline of industry talents. For example, the long-running Astar is a high-level programming competition for Chinese university students, school children and programming enthusiasts, with two sub-events, Programming Competition and Developer Competition. Astar has been successfully held for 16 years since 2005. It not only provides a stage for contestants to show their skills and aptitudes, but also further promotes the development of technology in the industry.

Pupils in the Final of Astar 2020

In 2020, 638 students from primary and middle schools signed up for the competition, with 34 making the final. Astar has seen more young contestants in recent years. Yifan Chen, a six-grade student is the youngest finalist in the 16-year history of Astar. He got full marks on the first two questions of the final and was awarded the special prize of Future Star.



Chen Yifan receives the Future Star special prize



Baidu Scholarship

The Baidu Scholarship was set up in 2013 to provide financial support for outstanding talent. Each year, we select eight to 10 top young talents and provide each with a grant of CNY 200,000, as well as other support such as data, platform, and expert guidance for their research work. Every year, Baidu Scholarship attracts nearly 10,000 students with Chinese origin around the world. Applicants are mainly from Switzerland, France, Italy, the United States, the United Kingdom, Australia, Singapore, Canada, Japan, China and other countries, covering the top AI fields of world-renowned universities[22] Master and PhD students.

Teaching empowerment

We recognize the challenges universities face in understanding the industry needs for AI talents, as well as in providing real industry datasets and practical cases. This is why we have been carrying out university-industry collaboration since 2015 by building university-industry docking platforms, promoting tertiary talent training reforms, and advancing AI + New Engineering subjects. We have joined with universities to reform AI curriculum teaching reform, helping universities to provide AI courses, build AI laboratories, improve AI faculty, and assist university students in practical AI projects. In six years, we have cumulatively committed nearly CNY 10 million in teaching and research funds in support of 367 projects at 212 universities, helping launch AI or deep learning courses at 156 universities, establishing AI and autonomous driving labs at 56 universities, and providing training and other forms of technical support for nearly 2,000 AI-related educators.

To lay a solid foundation for AI teaching, we partnered with Tsinghua University, University of Chinese Academy of Sciences, Dalian University of Technology, University of Science and Technology of China and other top universities in China to develop training courses and conduct training for teachers in the AI field. As of December 2020, 13 training sessions had been conducted. A total of 3,000 applications were received and over 1,800 teachers have attended the examination to participate in training.

Alpha College

We established Alpha College in 2018 to cultivate leaders in industrial intelligence transformation. The college's one-year program aims to help business managers discover new opportunities brought by the integration of industry and AI through the mutual validation of AI technology and frontier industrial applications, promote cognitive upgrading and cultivate management talents with AI thinking and the ability to accelerate the implementation of industrial intelligence practices.

[22] Such as Harvard University, Stanford University, Massachusetts Institute of Technology, Carnegie Mellon University, Tsinghua University, Peking University, Zhejiang University, etc.

Recruiting talent

We strictly abide by the *Labor Law of the People's Republic of China, Labor Contract Law of the People's Republic of China*, and other relevant laws and regulations. We have a fair and non-discriminatory employment policy and make every effort to ensure that there is no discrimination in hiring based on gender, geography, ethnicity, religion, age, pregnancy, marital status, disability, political stance, etc. We prohibit child labor and forced labor and respect and protect the legal rights and interests of all employees.

We abide by the principle of fair and equitable recruitment. Our *Management Standard of Baidu Recruitment* enables us to carry out regular recruitment, as well as build a comprehensive talent team to meet our strategic and business development needs.

As part of this, we began developing our intelligent recruitment system in 2015. This is applied to the entire recruitment process including resume evaluation, person-job fit, written exams. It anchors the screening criteria on work experience and personal ability to eliminate discrimination and interference from factors such as gender and education.

We select interns and graduates from around the world through campus recruitment programs. Our campus recruitment programs cover four types of recruitment, including spring internship recruitment, autumn campus recruitment, overseas campus recruitment, and top campus talent recruitment. In addition, we have special recruitment programs such as the Campus AIDU program and directed intern training program to provide senior staff mentors and professional guidance to each selected intern and new employee.



Baidu's diverse campus recruitment events

In 2020, owing to the COVID-19 pandemic, we launched live online presentations to encourage graduates to apply for jobs virtually. During the year, Baidu launched a total of 19 online live presentations, including four BG-level[23] sessions, eight functional sessions, and seven regional campus sessions, making our opportunities available to more than 7 million students.

Our recruiting programs also target experienced professionals. We regularly update postings on Baidu's job site[24] and recruit high-level talent through headhunters with whom we have long cooperation histories.

In 2020, we earned titles including Forbes' World's Best Employer and Top 100 China Best Employer.

Throughout 2020, we hired 11,326 new employees, including 4,398 female employees. As of December 31, 2020, we had 31,370 regular employees and 1,861 interns. Among regular employees, the average age of male employees is 31 and the average age of female employees is 30.

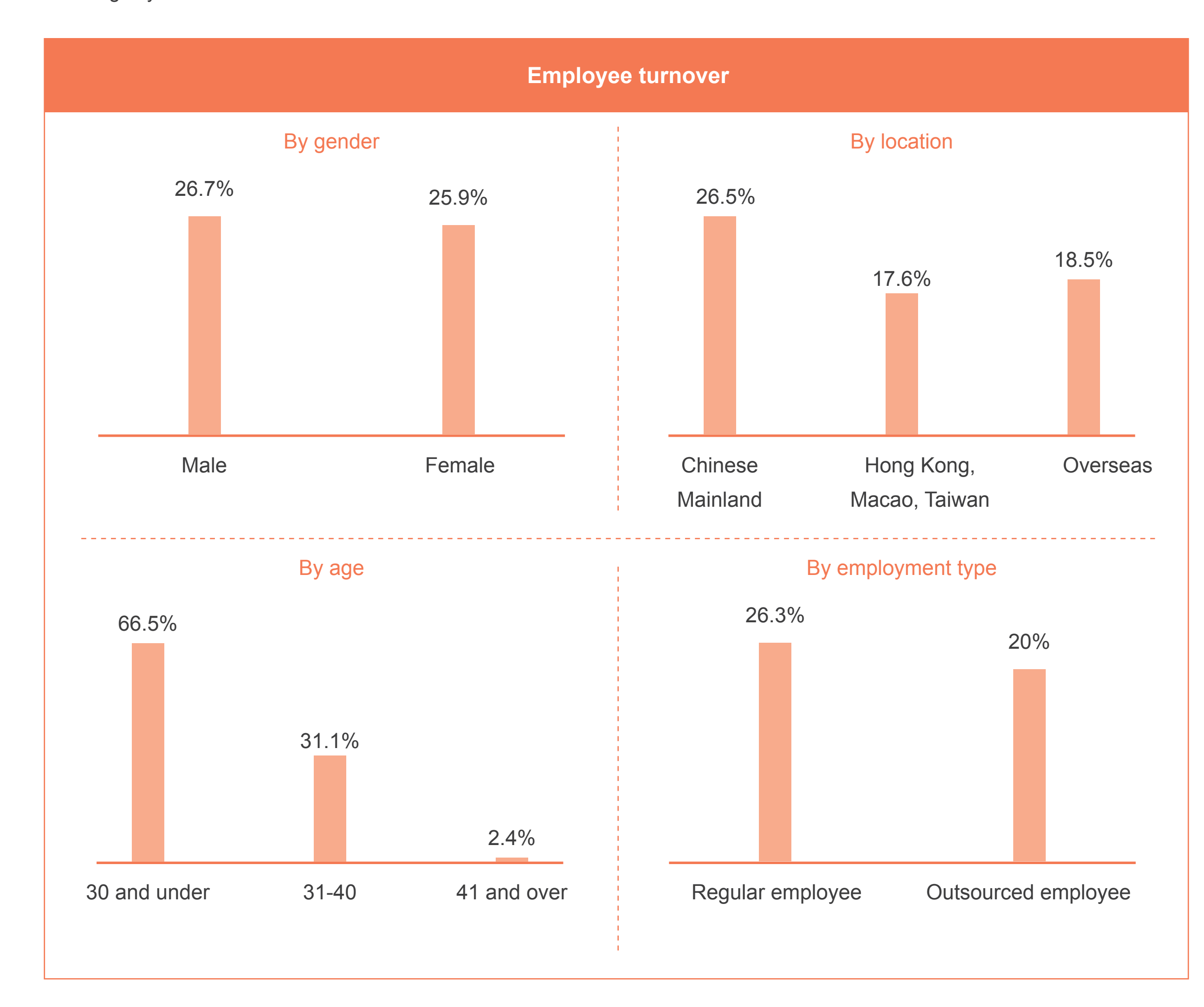
Classification		Number/proportion of employees
By gender	Male	18,208
	Female	13,162
By rank	Senior managers	19
	Mid-level managers	203
	Junior employees	31,148
By age	30 years of age and under	18,584
	31-40 years of age	11,907
	41 years of age and over	879
By location	Chinese Mainland	31,121
	Hong Kong, Macao, Taiwan	17
	Overseas	232
Minority groups	Employees with disabilities	25
	Employees with Hong Kong, Macao, Taiwan residency	41
	Employees with foreign nationality	99
	Minority ethnic groups	1,691
Female employees	Females among managers	44.6%
	Females in entry-level management	51.9%
	Females in top management	22.2%
	Females in revenue-generating business management[22]	55%
	Females in technical/engineering	33.1%
	Females in R&D	16.7%

Composition of Baidu's regular employees

[23] BG is short for Business Group

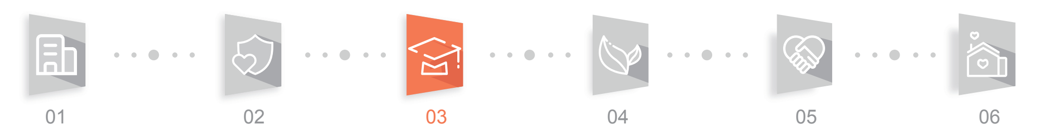
[24] Baidu's job site:https://talent.baidu.com/external/baidu/index.html#/globalTalent

Talent turnover is a significant issue among Internet companies. We continuously track employee turnover rate, summarize the reasons for employee turnover, and take targeted optimization and improvement measures to reduce employee turnover, thus retaining key talents.




Baidu employee turnover





Training and development

We have training courses and diverse self-improvement channels for all employees, from interns to management. According to *Baidu Training Management Standard*, our human resources department's Learning and Development Center makes an annual training plan every year. This is based on an analysis of employees' needs, combined with the company's strategic objectives. It also factors in competence requirements for roles, performance appraisal, and employees' personal development plans.

The Baidu Talent Intelligence Center (TIC) uses a self-developed knowledge recommendation algorithm to analyze employee data in such fields as corporate training and knowledge learning. Combining with career development plans, it accurately recommends personalized knowledge and training modules to employees.

Our online learning platform, online Baidu School, offers online course creation, search, learning, examination, evaluation and other services. As of December 31, 2020, more than 6,000 online courses had been offered in areas such as technology/R&D, product/marketing, management/workplace, and activities/life. According to statistics, tens of thousands of employees log on to online Baidu School for online learning every day. Baidu divides employee training into required courses, open courses, specific training, and other training to provide high-quality training for all kinds of employees. Ongoing feedback is collected and used to continuously improve our training offering.



- Training must be attended at a specific stage to achieve the appropriate skill level. Trainees must pass the appropriate evaluation before graduation
- Includes new employee training, as well as courses for management



- Employees can voluntarily enroll in these courses after joining the company. They are provided to help employees improve their overall abilities and job skills



- Targeted training courses or programs developed by the Learning and Development Center of Human Resources Department according to the needs of one or several business departments



- Lectures or various online open resources for courses or contents of common interest to employees such as business, leadership, mindfulness

Training courses developed by Baidu

Baidu has established tailored training programs and manager training programs based on business content and employee needs. Among them, tailored training programs and manager training programs are designed for different business contents of different systems of the company, and the training forms include, without limitation, lectures and workshops. Training manager of each system will make the annual BG training plan each year. For employees from different functional areas, we have customized rich training courses to match their needs for professional knowledge acquisition and career development.

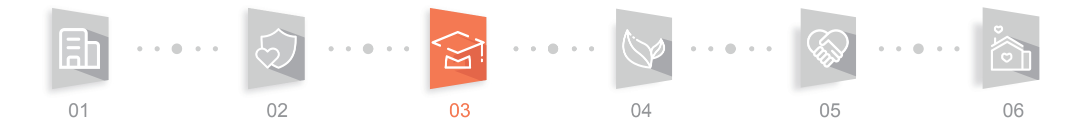
Career directions	Training programs
Sequence T (R&D)	The Coder Bootcamp, Engineer Learning Map, R&D Capability Training Camp, T7-8 T-Talk, Tech-Salon
Sequence P (Product)	To C PM[25] Learning Map, To B PM Learning Map, P6-P7 PM Cultivation
Sequence U (User Experience)	Sequence U Learning Map
Sequence E (Solution and Service for Governments and Enterprises)	AM (Sales) Capability Enhancement Camp, Solution Architect (SA) Ability Improving Camp
Workplace	Senior Management Face to Face, Quick Learning - Capsule Program

Baidu's sequence-specific career development training programs

A new tailored training program, To B Empowerment Training, was introduced in 2020 to provide targeted training in three areas: new employee training (to help new employees integrate into Baidu quickly), backbone training (business-oriented training courses for product managers and sales managers) and product training (regular product knowledge training based on the progress of the Baidu AI Cloud product R&D).

Manager training programs are courses based on the competency requirements for managers at different levels, aiming to improve their leadership skills and team productivity and cohesiveness. We have developed four leadership development programs to help everyone from new managers to directors develop specific skills and progress effectively including Starting to Lead, Forging Ahead, Mini MBA, and Navigate through the Management programs. We also encourage managers to improve their cappabilities and the company development through assessments and exams. In 2020, the training hours of Baidu managers reached 46 hours per person.

[25] PM: Project Manager, Product Manager



Leadership Programs	Target Groups	Program Goals	Sessions
Starting to Lead	New managers	Help new managers change their mindset from being key business talents to managers, understand their responsibilities, acquire fundamental management knowledge, and skills and become qualified associate managers	5-7 training sessions per year since 2013
Forging Ahead	Senior managers	Improve participant's ability to build a competent, strong, and high performing team as a senior manager	Based on topics and business needs
Mini MBA	Managers pursuing advanced studies	Enable managers to gain systematic knowledge of business management, broaden business horizons, improve high-level thinking and promote exchange and cooperation across departments	Once in a year since 2011
Navigate through the Management	Directors and above	Design training and enablement according to the company's overall strategy and major pain points, enhance the core competitive advantages of middle to senior management teams	Once in a quarter

Baidu's leadership development programs

In order to strengthen the internal learning atmosphere and promote the precipitation and transfer of organizational knowledge, Baidu has established an internal trainer system and lifelong learning program. Candidates of internal trainers come from voluntary registration or business nomination. After passing the interviews and selection by the Baidu University, they are certified to give lectures. Then they will need to complete the teaching preparation and meet the requirements before formally teaching a class. There is a three-level recognition mechanism for internal trainers, namely certified, senior, and gold medal trainers. Currently, we have 257 internal trainers, including 26 senior trainers and 27 gold medal trainers. In 2020, internal trainers and managers delivered 296 courses in total. Driven by the company's commitment to building a learning organization, 19 senior executives in Baidu became the trainers in the new employee orientation, which not only demonstrated Baidu's corporate culture and shared their work experience, but also created a sense of belonging and pride for the organization. After the in-person lectures, the recordings were also uploaded to the online platform Baidu School for more employees to learn.

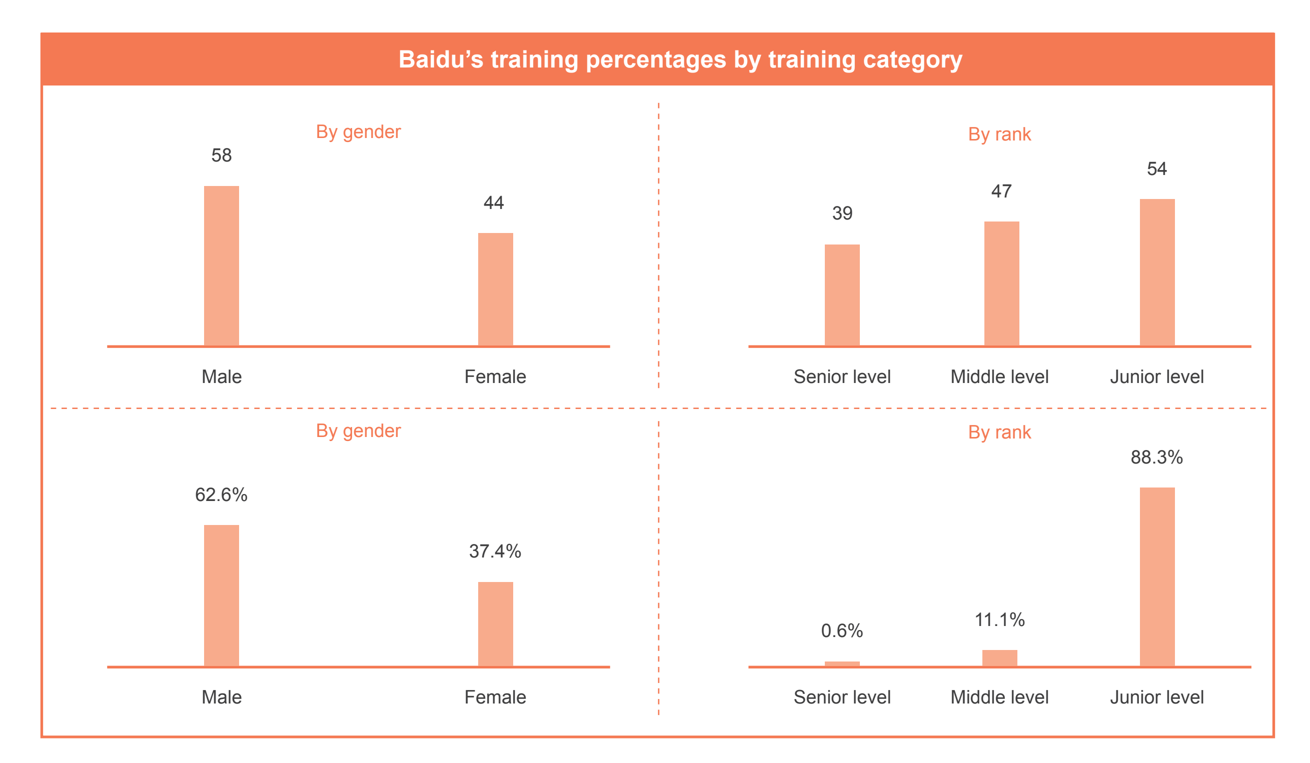
In 2020, we also introduced Baidu's Learning Credits as an important company-wide system that covers all regular employees (and serves as a reference for interns) and guides the learning-driven development of all people at Baidu. It comprises of Manager Credits and "Classmate"[26] Credits, depending on its target audience. In 2020, the system offered four compulsory courses and 153 elective courses for classmate credits, which covered nearly 30,000 Baidu classmates. As of December 31, 2020, a total of 1,816,858 classmate points had been earned.

We also enlist senior professors and third-party organizations to provide professional training. Through Baidu Research, we invite professors from well-known Chinese universities and U.S. universities to visit Baidu for cutting-edge technology sharing, covering areas such as vision, speech, natural language processing, knowledge mapping, and robotics.

To train directors and directors in the pipeline, we invite senior professors from Renmin University of China and other renowned institutions to teach courses such as Organizational Management, Marketing, Financial Management, and Strategic Competence. These combine external theories with corporate practice, to inspire managers to think innovatively.

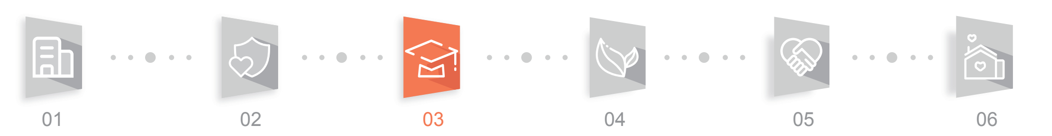
In 2020, we signed a university-enterprise cooperation agreement with the MBA Office of Hong Kong University of Science and Technology (HKUST) to provide employees with opportunities for further education.

All Baidu employees receive training. In 2020, staff received an average of 37.3 training hours, a rise of 65.9% from 2019.



Baidu's training percentages by training category

[26] To create a workplace atmosphere for equal communication and continuous learning, Baidu calls employees "Classmates" and suggests they call each other's names or "Classmates" instead of titles reflecting hierarchical relationships. Therefore, Baidu has earned its reputation as a university-like learning community in the Internet industry.



Employee incentives

Employees are our most important asset. We have a comprehensive promotion mechanism for employees, provide fair and competitive salaries based on scientific performance evaluation in the industry. We give recognition and incentives to excellent employees and help more employees achieve self-development and personal growth.

Compensation system

We determine the pay of employees according to rank, position, and ability, and determine short-term incentives and salary increases according to their performance.

A differentiated salary system is established based on professional functions and ranks with performance-related pay in place for all positions. In addition to base salary, the incentive portion of salary varies according to the work output of employees. Higher incentives and pay are offered to employees with better performance to encourage employees to earn more pay for more work.

Our employees have the right to appeal. We have communication channels, including face-to-face meetings and emails, for employees who object to salary and performance-related pay determinations. HRBP gives objective suggestions after discussion with the employee's supervisor, determines whether the employee's petitions are justified, and gives timely feedback.

Performance evaluation

Following the *Baidu Performance Management Standard* and other systems, we regularly evaluate employee performance and provide feedback to deepen employees' understanding of their responsibilities and increase their initiative.

Our performance management consists of objective setting, performance coaching, and performance evaluation. Objective setting is achieved by employees filling out quarterly Objectives and Key Results (OKRs)[27] which is agreed by their supervisors; managers provide performance coaching for employees, including daily coaching and quarterly OKR review; finally, employees are evaluated for performance levels on the premise of fully considering their task performance and contextual performance[28]. This performance evaluation mechanism is applicable to all regular employees at Baidu headquarters and branches.

The IMPACT model is adopted to conduct an annual performance appraisal at the end of each year. If there is any significant disagreement with the evaluation results, employees may communicate and appeal in accordance with the performance appeals process. The annual performance appraisal is carried out at the end of year to evaluate employees' performance from task performance and contextual performance, which consists of five steps, namely self-evaluation, peer evaluation, line manager evaluation, performance calibration meeting, and the evaluation result confirmation and approval.

Incentive mechanisms

Our long-term incentive program links the personal interests of directors, senior management and employees to the interests of the company's shareholders. This aligns them with long-term interests of the company to achieve the long-term development goals of the company.

In 2020, we continued to implement the *2018 Share Incentive Plan, which* focuses on groups that can contribute to the long-term development of the company. It covers specialized employees of certain levels, middle and senior managers, and the board members. Shares of stock options are vested in employees over years, and employees can trade their vested shares on the market.

We also have a short-term incentive mechanism for all employees. The scale and frequency of incentive bonuses are determined according to the characteristics of functions and responsibilities of different positions, and the short-term incentive plan is adjusted dynamically according to the changes in business development.

We also use awards and recognition mechanisms, such as the "Baidu Top Award" and "Baidu Pride", to recognize individuals and teams who have made outstanding contributions to the company.

The Baidu Top Award

The "Baidu Top Award", initiated by CEO Robin Yanhong Li in 2010, is the highest award at Baidu. It mainly recognizes grassroots employees who make outstanding contributions to the company and encourages the spirit of "small teams doing great things".

Teams must meet three criteria to be eligible:

• significant enough

• above and beyond expectations

• the team has fewer than 10 members

The award is the highest given to regular employees at any Internet company in China, with winning teams receiving 1 million USD. As of December 31, 2020, Baidu had given 39 Top Awards, totaling 39 million USD.

Baidu Pride

The annual "Baidu Pride" awards recognize the top individuals and teams who have made an exceptional contribution to the company and actively practiced Baidu's core corporate principle of being "simple and reliable".

Winners must:

• demonstrate a deep understanding of Baidu's strategy, carry forward our culture, and be role models at the company

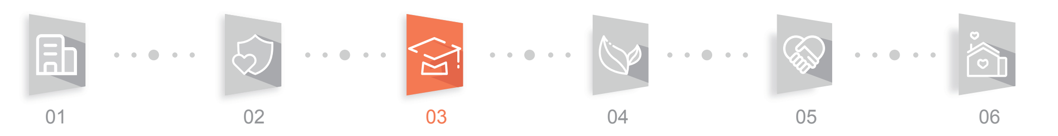
• be individuals or teams who have made significant positive effect and outstanding contribution to the company during the award year

• have performed deeds that are typically representative and can boost morale and inspire people

As of 2020, Baidu Pride awards have been presented for nine consecutive years and honored thousands of employees and nearly 100 teams.

[27] Invented by Andy Grove, founder of Intel®, and developed at Google, OKR is a set of management tools and methods to clarify and track objectives and their completion. OKR is used at Internet companies such as Facebook and LinkedIn as well as Chinese companies like Huawei and ByteDance.

[28] The positive impact that employees have on the achievement of organizational goals beyond their job responsibilities



Employee care

Baidu regards its employees as its most important and strongest partners. We respect human rights, promote democratic management, build a "simple and reliable" corporate culture, establish smooth communication mechanisms, make a comprehensive non-salary benefit policy, and provide protection for employees' occupational health and safety.

Human rights policy

Respect for human rights is a core value at Baidu. As a signatory to the United Nations Global Compact, Baidu observes international treaties such as the *Universal Declaration of Human Rights,* the *UN Guiding Principles on Business and Human Rights,* and the *ILO Declaration on Fundamental Principles and Rights at Work,* and has formulated the *Baidu Human Rights Policy*. We require our partners and suppliers to comply with this policy and encourage them to develop similar policies.

In the *Human Rights Policy*, we state we are committed to and guarantee a respectful and dignified work environment for all employees[29]. We provide equal opportunities for everyone in recruiting, hiring, training, promotion, and compensation and benefits, and strictly prohibit discrimination on the basis of gender, race, ethnicity, color, age, nationality, religion, physical disability, marital status, or other characteristic protected by law.

We have zero tolerance polices for any form of harassment, abuse, and coercion in the workplace and in any work-related environment outside the company. We protect all employees, especially women, from unfair treatment and retaliation. The company does not use child labor and prohibits the employment of persons under 18 in hazardous work, as required by law.

Democratic management

Since the inception, we have been embracing a "simple and reliable" corporate culture. We have comprehensive systems for communication, complaint and whistle-blowing, and satisfaction survey and feedback mechanisms to increase employee engagement and enhance their sense of belonging.

Corporate culture

"Simple and reliable" is considered by our employees the core values that can best represent our culture. In 2018, Baidu summarized its corporate culture and put forward "7 Principles of Corporate Culture" to interpret "Simple and Reliable". In 2020, we have officially upgraded the "7 Principles of Corporate Culture" into "Simple and Reliable 7+3 Code of Conduct", which gives employees more detailed behavior guidance. This is a process that further interprets and specifies our corporate culture, bringing general concepts into practice.

All employees must adhere to our seven principles:

1) user/customer first

2) open and honest

3) reliable and dutiful

4) courageoues and responsible

5) teamwork

6) impartiality and integrity

7) loyalty and companionship

Middle management and managers above a certain level must also adhere to three additional principles:

1) rejecting bureaucracy

2) leading by example

3) leading innovation

These three additional principles require management to pay attention to and establish connections with frontline employees to make junior colleagues identify more strongly with the company whilst ensuring timely dispute settlement.

Employee involvement in the formulation of Simple and Reliable 7+3 Code of Conduct

In early July 2020, Baidu invited all employees and managers to participate in a survey and provide feedback on the "Simple and Reliable 7+3 Code of Conduct". A total of 1,799 valid responses were collected, and the company adopted valuable suggestions and made revisions to the behavioral expressions that employees frequently mentioned, such as "user/customer first", "open and honest", and "teamwork".

Internal communication mechanisms

A smooth communication mechanism, an effective communication and complaint mechanism, and a comprehensive satisfaction survey and feedback mechanism are prerequisites for effective employee participation and are also important elements for the long-term effectiveness of employee participation mechanisms. Baidu adheres to democratic management, supports freedom of speech, and encourages open communication.

The *Baidu Employee Manual* states that "open communication is encouraged and employees can discuss any employment management issues with their direct supervisors, business leaders, human resources department or company executives at any time", providing an institutional guarantee for a smooth communication mechanism.

Baidu has set up a union federation which covers all regular employees and interns. When an employee raises a work-related grievance, the employee relations officer will communicate with the employee and actively seek a resolution. We also respect the freedom of association and the right of employees to join, form or not join a union in accordance with local laws. If an employee joins a legally recognized union, we are committed to engaging in friendly dialogue and collective consultation with the union or employee representatives.

We have established a variety of internal communication channels, including a full-featured intranet. This incorporates a forum and Q&A where all employees can speak freely and through which senior management and business line and product leaders can understand what employees really think about relevant matters. The intranet encourages positive and open communication and, as a general rule, does not delete posts, and allows users to ask or answer questions anonymously.

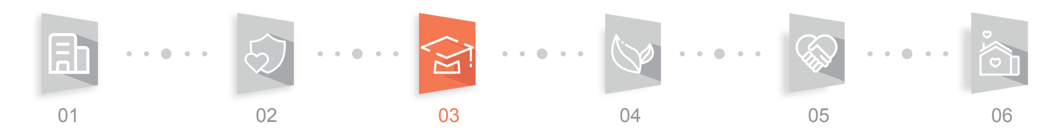
Senior management face to face

Our monthly internal communication meeting, the Senior Management Face to Face, which has been held for 22 sessions so far. It allows senior management and employees to discuss the company's latest strategic direction and business progress face to face. Senior managers also answer questions of common concern and interest, which are usually asked by employees freely in the corresponding section of the intranet or selected by vote before the meeting. Employees who are unable to attend can choose to ask questions via live streaming during the meeting, watch a video replay on the Baidu School platform or read the meeting transcript on the intranet. These steps also help to ensure the openness and transparency of each meeting.

Complaints and whisle-blowing mechanisms

Employees can submit feedback and complaints via designated email addresses and the intranet platform. They can also report them to the Human Resources Department via email. The corresponding person in charge will contact relevant employees within a specified time to help resolve the issue.

[29] This includes part-time employees, outsourced workers, and visitors.



We have a comprehensive performance-related grievance mechanism. Employees can submit performance grievances within five working days after performance evaluation results have been published on the internal ERP system. After receiving a grievance form, HRBP will investigate into the matter in accordance with our process and produce a fact determination statement and decision that, after being reviewed and approved by the responsible officer, is then fed back to the employee in writing. Employees who do not accept the preliminary handling opinion are entitled to appeal again.

We formulated the *Baidu Professional Ethics Reporting Management Regulations* to strengthen professional integrity; foster a harmonious, orderly, clean and healthy business environment, and protect the legitimate rights and interests of the company and its employees.

The *Regulations* provide four whistle-blowing channels, including email, in-person reporting, suggestion box, and letter. They encourage, regulate, and support whistle-blowing by internal employees and external personnel on employees and behaviors suspected of violations of disciplinary rules, laws, regulations, and ethical principles. For any whistle-blowing report, we require the responsible officer to respond within 24 hours after receipt of the report. The *Regulations* expressly sets forth the principles of "fair treatment and whistle-blower protection" and ensures that employees will not be subject to unfair treatments such as dismissal, demotion, suspension, intimidation, and harassment and outsiders will not be subject to any form of retaliation for reporting through legal channels.

Satisfaction survey and feedback mechanisms

Since 2011, Baidu has conducted our Human Capital Index (HCI) survey every year. This collects employees' job satisfaction as well as feedback on the issues they encounter in their work. It provides information on and suggestions for optimizing and improving the company's management measures.

Baidu continuously updates its employee satisfaction research methods for greater efficiency, flexibility and convenience to make it more accessible for staff.

In 2020, Baidu began to implement the survey at the business group level, with each business group implementing the survey at their pace and need, in place of the unified company-wide HCI survey. In addition, Baidu also launched a more convenient opinion collection and feedback channel, the Mini Pulse Survey, which is a small tool to assist organizational diagnosis and a new channel to receive employees' feedback with all respondents being protected by anonymity. As of December 31, 2020, the Mini Pulse Survey had conducted a total of 22 surveys on different topics since its launch in July 2020, covering an average of 5,000 to 6,000 employees per survey.

Non-salary benefits

Baidu has formulated the *Instruction on Baidu Caring Benefits Management, Baidu Community Management System*, and other policies to provide all regular employees and interns with welfare benefits in addition to salary.

The *Instruction on Baidu Caring Benefits Management* sets out the company's welfare arrangements including holiday benefits and gift cards/condolence payments. Baidu's union federation will send holiday gifts to employees and interns who have signed employment contracts with Baidu during New Year's Day, Spring Festival, and Mid-Autumn Festival; the company provides benefits for special events[30] of employees; and it also has a caring fund to provide financial support for employees in need[31].

Baidu cares for the physical and mental health of employees and organizes rich and diverse employee care activities to help them achieve work-life balance. The company has lounges, massage rooms, barber stores, reading rooms, convenience stores, coffee shops, gyms, yoga rooms, badminton courts, basketball courts and other facilities and amenities for employees to use when needed.

In particular, a wide range of fitness equipment is provided for employees in the gyms and professional fitness trainers are provide fitness instruction to employees. Baidu encourages employees to participate in all types of cultural and sports activities. Our employees have established 25 clubs including basketball, street dance, music, animation, and Chinese costume. The company provides a certain budget for each club, and all employees can join according to their personal interests. The company also supports communication and exchange within and between departments, and provides team-building funds. To enrich the spare-time life of employees, we regularly hold lifestyle lectures on topics including wealth management, travel, health care, food, beauty, and home life.

We cater for female employees via return-to-work celebrations after childbirth, a maternity room to give breastfeeding mothers privacy, gift bags on Women's Day, and a women's club that encourages communication and the organization of activities.

[30] Examples include wedding, childbirth, bereavement, etc.

[31] Examples include critical illnesses



Greenpine Plan

To help employees resolve cares at home, our Greenpine Plan offers CNY 300,000 critical illness cover for parents of employees, once employees join Baidu for over two years. This coverage is regardless of their parent age, health condition, social security status, place of residence and other factors.

In addition, during the free health examination period provided by the company for our employees, family members of our employees can also enjoy the health examination service at a discount.

Occupational health and safety

We are committed to providing a safe and healthy workplace for all employees, complying with applicable safety codes, and preventing and eliminating hazards.

We comply with the *Work Safety Law of the People's Republic of China, Fire Protection Law of the People's Republic of China,* and other laws and regulations related to occupational health and safety and workplace fire safety. We have a number of internal safety management policies, including the *Baidu Specification on Office Management and Baidu Office Emergency Plan*.

Employees are entitled to five basic insurances and one pension, plus—from the second month of employment—subsidized commercial medical insurance. We provide employees with comprehensive annual health checkups. Each office has a health space offering day-to-day health advisory services, free over-the-counter drugs, a massage room, a gym, a yoga room, a badminton court, a billiards table, and free fitness classes.

Our Ledu Employee Assistance Program provides mental health counseling via phone, the DuLife service platform or email. From its founding in 2017 to 2020, the service had provided more than 2,400 instances of counseling for employees.



HPV employee care

An internal HPV awareness campaign—organized by the Health Business Department and Du-Learning—was launched in September 2020. Doctors from hospitals including Peking University People's Hospital shared information about HPV and related topics.

During the COVID-19 pandemic, in order to protect the safety of employees, Baidu issued an employee care plan. We supported the physical and mental health of employees, arranged for employees to delay their return to the workplace, enabled them to work from home, conducted a timely reporting of employees' personal status, implemented a discretionary quarantine system and checked on the safety of employees in real time in affected areas, for effective pandemic prevention and control.

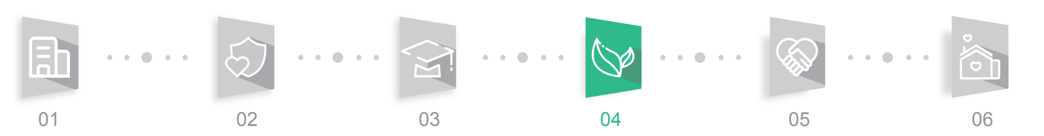
In 2020, Baidu had 10 work-related accidents with no employee fatalities.

IV Promoting sustainability

Baidu actively responds to the national call for energy conservation and emission reduction. We adhere to the concept of green development, implement low carbon strategies, and fully unleash the potential of technology and business models in innovation, thereby accelerating the transition to the green, low carbon, digital economic development and advancing China' goals of "Peaking Carbon Emissions by 2030" and "Reaching Carbon Neutrality by 2060".

As a non-production enterprise, our environmental impact is mostly caused by carbon emissions produced by energy consumption in our data centers, as well as waste generated in offices. Therefore, while building green data centers, Baidu also promotes green office practices, as well as identifies and actively responds to climate change risks. We are committed to building an eco-friendly, low carbon enterprise, and honoring that commitment with concrete action.





Key environmental performance indicators[32]

Baidu strictly complies with the *Environmental Protection Law of the People's Republic of China*, the *Energy Conservation Law of the People's Republic of China*, and other environmental laws and regulations.

In 2020, our overall energy consumption was 72,249.6 tons of standard coal equivalent, representing an energy intensity of 2.3 tons of standard coal equivalent per person.

Indicator	Unit	2019	2020
Diesel oil	L	386,404.6	739,508.7
Gasoline	L	/	10,913.0
Natural gas	m^3	2,409,789.6	2,565,301.0
Electricity	kWh	490,628,065.2	529,137,384.1
Steam	t	8,221.2	8,897.8
Purchased heat	GJ	/	51,166.1

Baidu's energy consumption

Scope	Unit	2019	2020
Scope I *	tCO2e	5,390.52	5,974.1
Scope II *	tCO2e	300,588.92	46,8245.5
Scope III *	tCO2e	19,810.24	16,621.8
Total	tCO2e	325,789.68	490,841.4

Baidu's GHG emissions*

* Direct emissions, including losses, emissions from stationary combustion sources, boilers, kitchen equipment, and refrigerators
* Indirect emissions, including those from purchased electricity, steam, and heating
* Other indirect emissions, such as domestic sewage, and emissions from business travels and buildings
* The quantity of greenhouse gas emissions is expressed as a carbon dioxide equivalent. We sourced the data and sum of emission factors from authoritative international and domestic institutions. The fossil fuel emissions factor is based on the low calorific values of fuels provided in *China Energy Statistical Yearbook 2017*. The greenhouse gas emission coefficient is provided in 2006 IPCC Guidelines for National Greenhouse Gas Inventories. The electricity-related emissions factor adopts corresponding values in *China Regional Grid Average Carbon Dioxide Emission Factors in 2011 and 2012* and IPCC.

Indicator	Unit	2020
Total non-hazardous waste*	t	3,907.6
Intensity of non-hazardous waste	kg/person	124.6
Total hazardous waste*	t	27.2
Intensity of hazardous waste	kg/person	0.9

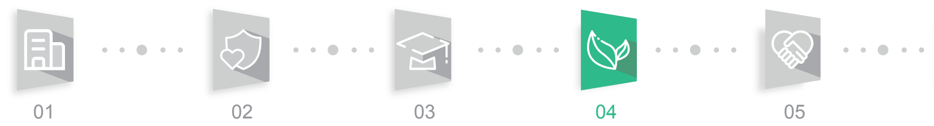
Waste generated by Baidu

* Including office paper, waste cartons, publications and newspapers, scrap metal, waste plastic, and kitchen waste
* Including lamps, electronic equipment, toner cartridges, and batteries

Indicator	Unit	2020
Water consumption	t	1,279,940.6
Intensity of water consumption	t/person	40.8
Wastewater discharged	t	591,523.5
Rainwater collected	t	4,900.0

Baidu's water consumption

32 In 2020, our environmental key performance indicators covered all of our offices and charging stations in Beijing, and our R&D centers and data centers in Shanghai, Shenzhen, and the US.



Greening our data centers

The Internet Data Center (IDC) is of fundamental significance to Baidu, as it powers our products and services uninterruptedly throughout the year, provides services for over one billion users, and is capable of carrying trillions of search queries, tens of billions of positioning data, and tens of billions of image and video data. To mitigate the energy consumption of these high-intensity data centers, Baidu is committed to creating green, low carbon, energy-saving and environmentally-friendly IDCs. Vigorously promoting the construction, operation and maintenance of green data centers and through continuous optimization of scheduling, Baidu replaces old servers, exits high-consumption IDCs, and increases the share of self-built IDCs. At the same time, Baidu improves energy efficiency and reduces GHG emissions through continuous technological innovation and iteration.

Technology innovation

Baidu was the first in the industry to adopt a one-way mains supply + one-way HVDC (high voltage direct current transmission) power architecture for data centers. Our pioneering distributed lithium power system is perfectly integrated with server rack cabinets. Sustainability simplified front-end power distribution enables flexible modular deployment and this increases power efficiency from around 90% to 99.5%. Based on the Baidu "PaddlePaddle" platform, Baidu has constructed an AI control system that monitors operating data in real time and is continuously optimized. Baidu's most energy-efficient data center boasts a world-leading PUE[33] of 1.08.

IDC construction

Baidu's data centers under construction in Xushui and Dingxing in Baoding and Yangquan adopt the Baidu M4 data infrastructure equipment, an AI control system based on Baidu PaddlePaddle platform, and all-new prefabrication, modularization, and intelligence solutions, representing the first prefabricated data centers in the industry, with average design PUE reaching 1.15. In particular, Baidu is the first in the industry to adopt its in-house developed DPC "Iceberg" phase change cooling system, which increases single-cabinet cooling capacity to 20kW.

In 2020, the annual average PUE of Baidu's self-built data centers reached 1.14, with its infrastructure energy consumption down 76% compared to the industry average of 1.59, and the annual average PUE of its most energy-efficient data center reaching as low as 1.08, putting Baidu in an industry-leading position in energy conservation and emissions reduction.

In 2020, Baidu completely optimized data center layout with resource integration through R&D of related IDC and cutting-edge network technologies; meanwhile, Baidu established a modern operation platform and system to ensure the high-quality, high-efficiency and low-cost operation of our data centers.

Besides, Baidu's IDCs have actively adopted energy-saving lighting equipment and increased the proportion of clean energy use. In 2020, Baidu purchased 45 million kWh of wind power and generated 293,000 kWh of photovoltaic power via our rooftop photovoltaic power systems; Baidu reduced its greenhouse gas emissions by nearly 44,000 tons of carbon dioxide equivalent through the use of renewable energy; Baidu established new data centers in areas such as Yangquan and Yizhuang which all adopt energy-saving LED lights for lighting; We renovated the heating, ventilation and air-conditioning in our offices to improve their efficiency. In addition, Baidu implemented the first solution in China that combines non-cavity floor, precise ventilation wall cooling, optimized gas flow, as well as a high-temperature chilled water system, so that the natural cooling accounts for more than 94% throughout the year. For the first time, Baidu applied wastewater recovery and reuse technologies.The technologies adopted by the Baidu Yangquan Data Center Phase I can reduce the amount of sewage discharged per day by 1,328 tons and enable the water cooling system to achieve a water retention rate of 44.8%. After ultrafiltration and desalination, wastewater will be turned into qualified cooling water and will be reused in the refrigeration system. This creates a virtuous cycle that is eco-friendly and can facilitate the sustainable use of water resources.

[33] Power usage effectiveness (PUE) is a commonly used global metric for the energy efficiency of a data center. PUE is the ratio of the total energy used by a data center to the energy delivered to ICT equipment. A PUE value near 1.0 would indicate high energy efficiency in the data center and less energy consumption and losses of Non-ICT equipment.

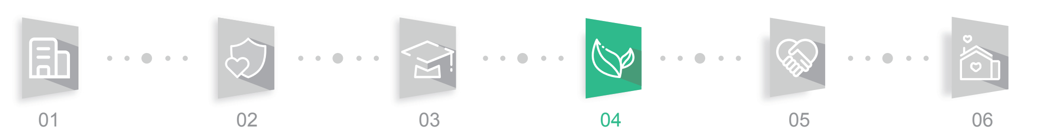


Solar panels on the roof of a Baidu IDC

Carbon verification at Yizhuang Data Center

Baidu invited a third-party organization to conduct a comprehensive carbon accounting of our Yizhuang Data Center. This covered the emission source identification, verification boundary description, direct and indirect emissions, annual emissions, and compliance. The results helped us to accurately assess our GHG emissions at the organization level and improve our emission management.





Greening our business

Baidu actively integrates sustainability into every aspect of our daily operation and management. We improve energy efficiency and reduce waste emissions through systematic, scientific management and optimization, without affecting the work and life of our employees.

Our range of sustainability policies and solutions includes the *Baidu Technology Park Energy Management System, Baidu Building Water Saving Guidelines,* the *Operational Energy-Saving Plan for Baidu Buildings, Equipment and Facilities,* and *energy-saving solution for Central Air-Conditioning and Ventilation Systems, Power Distribution Equipment and Facilities, Escalator Installations,* and *Water Supply and Drainage Facilities*.

Resource utilization

Baidu is committed to strictly implementing relevant regulations on energy and water resources management, actively promoting sustainable development and resource conservation among employees, creating a culture receptive to energy conservation and consumption reduction, and actively responding to the national call for green offices, energy conservation and emission reduction.

Baidu insists on the scientific management of the use of water, electricity, natural gas, gasoline, and other resources. Statistics are recorded in dedicated ledgers. To further regulate consumption and ensure that it is effectively controlled, a monthly report analyzes differences in consumption and determines optimization measures.

Baidu introduced an international, standardized energy and environmental management system to keep improving our environmental performance in Baidu offices. Our property manager Anxinhang Property Management holds ISO 14001:2015 environmental management certification. The ISO 50001:2018 energy management system certification of our headquarter in Beijing has entered the expert review stage.

In 2020, Baidu introduced the *Water Resources Management Policy*. This requires optimization for all water use and aims to achieve maximum benefits with minimum investment. We have built three sets of rainwater collection tanks in the Baidu Technology Park, with a combined capacity of 1,400m³. The rainwater collected is used for the irrigation of the park. With the increased precipitation in 2020, the amount was increased by 1,000m³ compared with the year before.

Meanwhile, Baidu improved our electricity efficiency and increased our use of renewable energy.

In 2020, we renovated the lighting of the garages in the Baidu Building and replaced general lights with 1,622 LED ones. It is estimated that at least 300 MWh power can be saved per year, with around CNY 30,000 saved.

Renovation projects for decommissioned high-energy-consuming electromechanical equipment, including 19 floor heating circulation pumps, hot water circulation pumps and fire protection pumps, as well as 11 electromotors of exhaust fans, have been completed in Baidu Building and Baidu Technology Park Phase II.

Baidu Technology Park's central air-conditioning and fresh air systems have a heat recovery module. In summer, fresh air can be precooled and dehumidified. In winter, fresh air can be preheated and humidified with a recovery rate of 30%. This system can effectively lower the cooling loads and power consumption of air conditioners while ensuring sufficient fresh air.

To promote green travel, Baidu added eight NEV AC charging stations for employees at the Baidu Campus and Baidu Technology Park.

Managing waste

Baidu's Beijing headquarter monitors and records the amount of waste generated by category and transferred them to the corresponding waste treatment agency. Domestic waste is transferred to a waste treatment plant for incineration and power generation. Kitchen waste is transferred to the Dynagreen waste treatment plant for anaerobic fermentation, which turns the waste into high calorific energy. Hazardous waste is transferred to specialized treatment facilities for harmless treatment.

Electronic products scrapped from our daily operations and office work are passed to vendors with recycling credentials. Some reusable devices are sold on the secondhand market, which recycles resources while reducing the emissions of carbon dioxide and other pollutants created by waste treatment. In 2020, we disposed of approximately 9,900 laptops, monitors, desktop computers, cell phones, projectors, and other electronic devices.

In 2020, Baidu took the following actions to strictly control waste emissions and recycle resources:

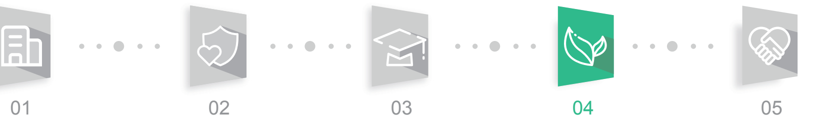
The wastewater from the IDC of the Baidu Technology Park Phase II and the cooling tower in the office area is put into the recycled water system connected to the building. There is zero wastewater discharge from those towers. This saves about 10,000 tons of recycled water per year and deliveries energy consumption reduction.

Annual water savings of approximately **10,000 tons**

Responding to the government's call of garbage classification, we dedicated resource to enable us to strictly sort all daily waste. We have removed the small personal trash bins at 25,000 workstations; and 1,200 sets of recycling bins have been equipped in work areas, one set for every 20 people. A total of 174 sets of recycling bins have been equipped in rest areas, including one set for every tea break area.

1374 sets of recycling bins have been equipped

We transformed nine garbage rooms into separate dry waste (office waste, domestic and kitchen waste) from the wet waste. Meanwhile, we added cooling equipments to decrease their environmental pollution.



Putting sustainability into action

We practice and promote sustainable development, helping our users and the wider community to develop green living habits. And we leverage our core technologies to create sustainable solutions. For example, AI, Apollo autonomous driving, DuerOS Auto Service, and Baidu Maps are driving the development of the NEV industry.

Educating users about waste

Number of mini-program usage times exceeding

150 million

Number of search requests for domestic waste exceeding

44 million

Our AI Waste-Sorting Mini-program has powerful intelligent features, such as Quick Q & A, voice and text search capabilities, and image search. These comprehensively satisfy user needs and improve user experience. In 2020, by cooperating with the regulatory authorities in Beijing and Shenzhen, Baidu imported official and accurate data into our mini-program across PC, mobile web and Baidu App platforms. It represents the most diverse, accurate, and convenient way to meet the waste-sorting needs of the majority of users. As of December 31, 2020, the average daily use of the mini-program had hit 500,000. Cumulative usage had topped 150 million, with searches about kitchen waste reaching 44 million, providing the most diverse, accurate, and convenient way to meet the waste sorting needs of users.

Creating a green travel incentive

Number of visits to project site exceeding

1.95 million

Cumulative carbon emissions reduction exceeding

2,000 tons

On September 8, 2020, the Beijing Municipal Commission of Transport, the Beijing Municipal Ecology and Environment Bureau, and Baidu Maps jointly launched the "Establishing a Green City through MaaS Travel" program (the Green Travel Program), through which a carbon inclusive incentive method on green travel was introduced. Users can obtain the corresponding amount in carbon emissions reduced in their Baidu Maps account, which can be redeemed for various benefits or gifts. This encourages users to embrace green travel and hence to contribute to greater transportation efficiency and a better environment in Beijing. In 2020, this program has attracted many of Beijing's citizens to participate, the total usages of the program in Beijing exceeded 1.95 million, with over 2,000 tons of carbon emissions reduced. The most remarkable single user has accumulated over four tons of reduced carbon emissions, with 10,000 kilometers covered.

Enabling paperless education

Number of Baidu Wiki entries exceeding

22 million

Number of questions answered for users exceeding

590 million

Average daily users served exceeding

520 million

Our product platforms Baidu Wiki, Baidu Knows, and Baidu Wenku constitute a huge knowledge content system, and are resources for paperless education.

By providing authoritative science popularization services and with over 22 million entries, Baidu Wiki serves as a Chinese encyclopedia for all Internet users; functioning through Q&A, Baidu Knows contains over 590 million answers to questions asked by users and serves more than 520 million users per day; Baidu Wenku is a platform for users to share e-documents and has amassed over 880 million high-value documents as well as other educational resources.

Baidu has increased the efficiency of information transmission and avoided the unnecessary consumption of paper by providing the services of online knowledge sharing and the digital storage of documents, which saves natural resources while offering easier access to open-sourced educational resources.

Responding to climate change

Extreme weather and climate events such as snowstorms, typhoons, and heavy rainfall have become more intense, frequent, and lasting. Their effects include power supply interruption and urban flooding. These pose a great risk to assets such as our IDCs. Accordingly, we actively identify climate change risks and formulate responses to them.

To cope with the impact caused by extreme weather and ensure business continuity, Baidu has developed emergency procedures for extreme climate scenarios. These include regular emergency drills for six extreme scenarios: public health incident, earthquake, typhoon, fire, personnel adjustment, and safety accident. Our preparedness measures include decentralized server rooms and off-site backup of important systems and business data. The aim is to ensure uninterrupted service in the event of emergencies.

Our Baidu AI Cloud platform has earned ISO 22301 business continuity management system certification for a fifth consecutive year. It effectively ensures the continuity of cloud service business and provides a complete, convenient, and secure infrastructure for the intelligent industry.



V Improving service

Baidu fulfills its corporate citizenship by providing users with high-quality, safe and reliable products and services. We focus on online content governance, continuously improving user experience, protecting intellectual property rights and respecting the creative works of others, growing the industry, and building an efficient and harmonious cyberspace with all stakeholders.



Content management

To foster a clean environment in the cyberspace, protect the legal rights of users, guide the responsible use of the Internet, and manage harmful information, we continuously strengthen our online content management.

Our internal rules and policies, covering all business lines, are in accordance with the *Cybersecurity Law of the People's Republic of China, Measures for the Administration of Internet Information Services, Provisions on the Governance of the Online Information Content Ecosystem*, and other laws and regulations regarding content security and ecological governance. As for Baidu's product content risk control, based on the above relative laws, we have rules including *Baidu Content Information Security Management System, Baidu Content Ecosystem Management Standards,* and *Baidu General Review Standards for Ecological Governance of Harmful Information*. For business content management, we have *Baidu Advertising Bans Management Policies, Commercial Advertisement Submission Manual etc*., to ensure the content security and compliance of business promotions.

To maintain the healthy and orderly development of Baidu's products and curb the spread of harmful information, in October 2020, we established a regulatory committee, "Duchacha Self-regulation Committee", dedicated to engaging all users and stakeholders. This committee prioritizes responding to harmful content that is the subject of complaints from users. It launches special campaigns for serious issues.

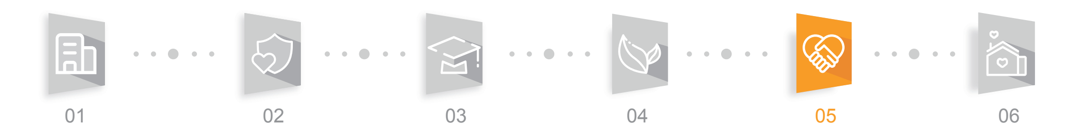
Baidu releases the *2020 Cybercrime Report on Blackhat and Grayhat Hacking*

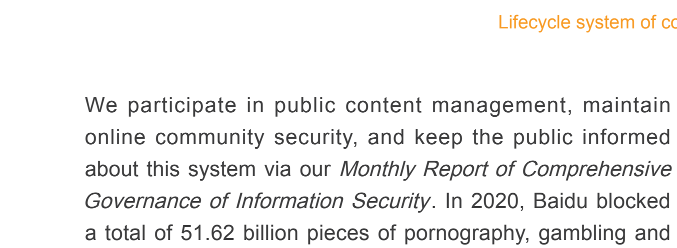
In 2020, Baidu and the Cyber Security Law Research Center under the Ministry of Public Security published the *2020 Cybercrime Report on Blackhat and Grayhat Hacking*. This focuses on common black hat (malicious hacking) and gray hat (non-malicious hacking) cybercrimes, reveals their current situation, and analyzes trends. It paints a comprehensive picture of such crimes against Internet companies and offers specific recommendations for tackling them.

In 2020, during the pandemic peak, we identified and cleaned up 147,670 pieces of harmful information related to the pandemic. And we investigated, handled, and collected facts about 64,437 pieces of information, of which 25,291 were in violation of laws.

Product content management

A dedicated team strengthens our online content management, covering diversified dimensions such as platform technology, security strategy, emergency response, compliance management, and training management, forming a life cycle system that encompasses content production, distribution, and evaluation.





Stages	Production: online content development system	Distribution: a control system that combines automatic identification and manual review	Evaluation : management and evaluation
Management measures	◆ Content control from both production side and distribution side	◆ Identification and filtering of non-compliant content	◆ An outcome-oriented cyberspace ecological evalution system with well-defined evaluation methods, frequency, release process, feedback mechanism, etc.

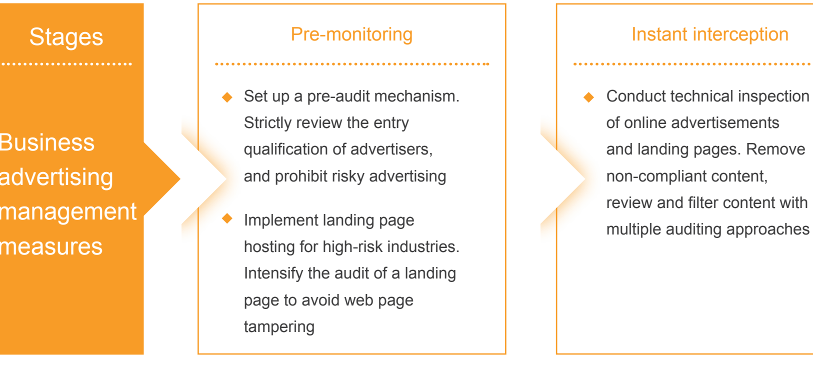
Lifecycle system of content management

We participate in public content management, maintain online community security, and keep the public informed about this system via our *Monthly Report of Comprehensive Governance of Information Security*. In 2020, Baidu blocked a total of 51.62 billion pieces of pornography, gambling and social security violations, of which 51.54 billion pieces were disposed of by machines and 80 million pieces were disposed by manual inspections.

In addition to combating harmful information, we are dedicated to optimizing our content ecosystem. In 2020, we joined hands with the World Health Organization, United Nations Children's Fund, International Fund for Animal Welfare, and China Wildlife Conservation Association to publish quality content on topics such as animal protection, public health, gender equality, and child protection.

Business promotion content management

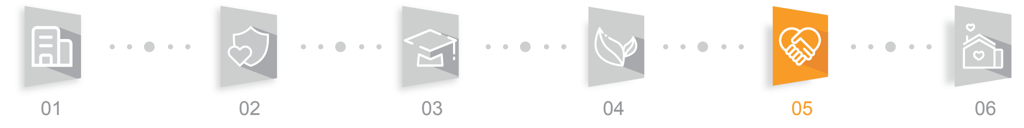
To regulate business promotion on the Internet and improve the search experience of users, Baidu has built a risk control system of "AI inspection plus human double-check plus human patrol", which establishes a closed-loop defense mechanism through various algorithms and training models. We have also optimized our advertiser qualification audit mechanism. This rejects unqualified advertisers and protects the rights and interests of service users.



Stages	Pre-monitoring	Instant interception	Post-tracing processes
Business advertising management measures	◆ Set up a pre-audit mechanism. Strictly review the entry qualification of advertisers, and prohibit risky advertising ◆ Implement landing page hosting for high-risk industries. Intensify the audit of a landing page to avoid web page tampering	◆ Conduct technical inspection of online advertisements and landing pages. Remove non-compliant content, review and filter content with multiple auditing approaches	◆ Carry out compliance verification to avoid any content tampering with advertisements. Remove harmful advertisements and suspend their accounts

Baidu's full life cycle content management system for business promotion

In 2020, Baidu rejected a total of more than 2.298 billion illegal advertisements of all kinds and punished a total of 28,031 illegal advertising accounts.



Baidu fighting disinformation

In 2020, Baidu used its technological advantages to help the pandemic response by cleaning up advertising. We added coronavirus clauses to our *Baidu Advertising Bans Management Policies*, requiring advertisers, publishers, and spokespersons to act in strict accordance with laws, regulations and policies related to pandemic prevention and control. We prohibited the use of specialized terms, and the word "coronavirus" or variants of it for commercial purposes in ads, images and landing pages, to maintain the order of the advertising market during the pandemic.

To help users identify authentic information during the pandemic, we launched a disinformation-busting platform. As of December 31, 2020, Baidu had identified more than 1,000 items as disinformation, confirmed information or to-be-proven information, helping users distinguish rumors and fight the pandemic scientifically.

For concerns regarding the quality of masks, we introduced a query function on the Baidu App in February 2020. By entering the relevant product information (company name, brand name and registration number), the users could easily track the manufacturer information registered at National Medical Products Administration.

Baidu Content Security Center had trained a total of

18,044 person-times

In 2020, Baidu trained staff on the identification and determination of content such as sensitive information, information harmful to personal safety, obscene material, pornography, feudal superstition, rumors, and harmful information for minors. As of December 31, 2020, the Baidu Content Security Center had trained a total of 18,044 person-times, of whom 2,356 person-times were assessed for elevated content inspection training; 3,459 person-times were assessed for induction and transfer training for basic content inspection; and 31,327 person-times were assessed for standard updates, monthly examination, on-the-job training and special training based on content inspection.



User experience

Baidu prioritizes user experience by protecting users' rights and improving customer service system.

Service security assurance

To ensure that users find safe and reliable information on our platforms, we mark search results with labels such as "Official" and "Protection". These help to identify official websites and protect users from phishing and malicious sites. As of December 31, 2020, we had labeled 300,000 verified public institutions with 20 million search terms involved, including government agencies, hospitals, schools, national defense agencies, social groups and foundations. The coverage scope keeps expanding.

Thanks to the Baidu Netizen Rights Protection Plan, users can apply for compensation if, whilst logged in to their Baidu accounts, they incur financial losses from transactions made on sites we have labeled with our "Advertisement" and "Protection" logo. In 2020, the Baidu Netizen Rights Protection Plan was upgraded with expanded coverage and increased compensation standards in special industries. If customer service is unable to resolve a dispute, Baidu will introduce a third-party organization, the People's Mediation Committee, to assist in online and offline service dispute resolution, so that users' rights and interests are better protected.



Application Submission

Compensation claim must be submitted within 30 days of users' payment



Customer Service Verification

Customer Service verifies with the user via telephone

Consultation and Mediation

Customer Service mediates between the user and the merchant





Customer Service Adjudication

Customer Service decides the protection results and compensation



Reveiving Compensation

Signing of mediation agreement and receiving compensation

Baidu netizen rights protection and compensation claiming process

The Baidu Netizen Rights Protection Plan hosts live broadcasts

To prevent online shopping scams, the Baidu Netizen Rights Protection Plan hosts live broadcasts featuring interactive games and quizzes. In partnership with consumer councils, the Plan organizes online and offline activities to increase user awareness and help prevent risks.

In 2020, Baidu conducted 10 livestream events themed with the Baidu Netizen Rights Protection Plan with a total of 971 minutes, which covered topics such as home appliance repair, pets, moving, and online loans and reached more than 160,000 users with 500,000 views.

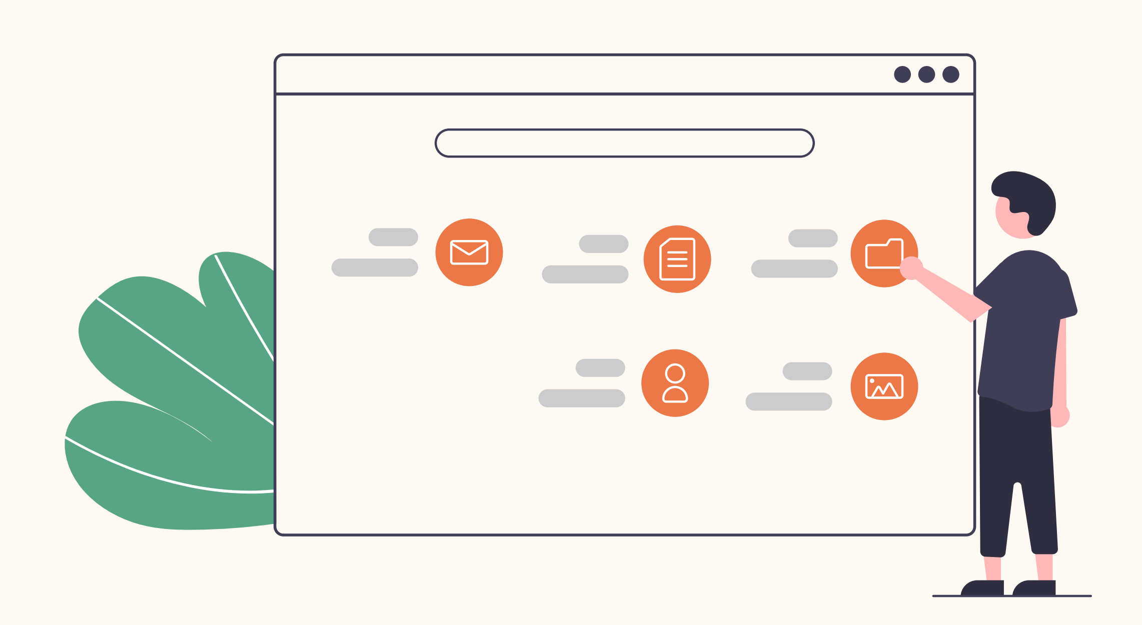
Convenient service experience

Baidu continuously improves its customer service and offers channels to respond to users in a timely way. In 2020, we added customer service to our platforms, shifting the emphasis from replying to messages left by users to responding online. The feature was first applied in Baidu Netdisk after its launch and some users can get real-time feedback through instant interaction with human customer service. In 2020, 200 product lines were accessed to the Baidu user feedback portal, covering 1,231 products with a 100% user feedback processing rate; over 80 million cases were handled, earning 92% user satisfaction.

When using the Baidu App, users can click on the "X" to realize "Reporting and Feedback", at the bottom right of the news or advertisements if they encounter low-quality information containing clickbait headlines, misspelled words, or false advertisements. Or they can give feedback and follow up on the status of handling through the "Help and Feedback" page in the personal center. Questions about personal information protection can be logged at http://help.baidu.com/personal information or via the channel displayed on each product page. For immediate response and assistance, users can contact human customer service via our 400-921-3900 hotline.

Baidu upgrades and enhances products according to the core needs of users. Ease-of-use is a particularly important consideration during design, development, and update stages.

We pay particular attention to facilitating the use of our products and services by disadvantaged and minority groups, as well as information accessibility.



Intellectual property and copyright protection

We protect our intellectual properties and those of others. We built a comprehensive mechanism that includes our *Patent Quality Assessment Standards, Patent Complaint Handling Manual,* and *Open Source License Compliance Guide.* We also have smooth channels for complaints and feedback. We remove infringing products and content in a timely fashion and comprehensively avoid infringement risks. Internally, Baidu values and encourages technological innovation and invention and promotes the application of these achievements.

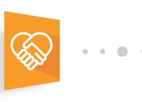


Patent wall at Baidu headquarter

In 2020, Baidu won four China Patent Awards for AI breakthroughs in different fields. All have been utilized in real-world applications. In terms of AI patent applications and grants, we ranked first in China with 9,364 patent applications and 2,682 patent grants respectively. Baidu also ranked first in seven specific fields, namely deep learning technology, intelligent speech, natural language processing, autonomous driving, and big data in transportation. We have held first place in patent applications in the AI field for three consecutive years, demonstrating our strength as an industry leader.

To lead the industry in intellectual property protection and development, we have been proactive in sharing our breakthroughs. As a strong supporter and practitioner of open source, Baidu has launched multiple open-source platforms, such as the industry-level deep-learning open-source platform PaddlePaddle, China's largest AI open platform, the Apollo autonomous driving platform, smart transport, and IoV.

We have developed regulations and documents to facilitate open-source internal projects, ensure licensing compliance, respect third-party intellectual property rights, and contribute to the open-source community. As of now, Baidu has open-sourced 1,023 projects in 18 open-source organizations led by GitHub, with more than 20,000 community contributors and more than 210,000 Stars gained. We have also donated a total of nine projects to the Apache Foundation, Linux Foundation, CNCF, and Open Atomic Foundation.

Baidu joins Open Invention Network (OIN)

In July 2020, Baidu joined the Open Invention Network (OIN), a patent union that defends Linux against IP attacks with over 3,300 members including world-renowned big names. Joining OIN demonstrates our commitment to open-source innovation, patent protection and supports the healthy development of the Linux ecosystem.

Baidu respects copyrights and the work of content producers. If work is plagiarized, complaints can be lodged at copyright.baidu.com with a prompt response.

Baidu Baijiahao pioneers Internet-wide copyright assurance for authors

Specially launched by Baidu for content creators, Bajiahao is a network that integrates content creation, publishing, and monetization. Baijiahao is also a new operating platform for many corporate accounts to achieve marketing conversion.

Baijiahao pioneered in providing Internet-wide copyright protection for originators. As of December 31, 2020, it had covered nearly 3.6 million originators. A range of copyright protection functions includes online authorization, evidence collection, credential storage, monitoring, and assertion of rights. It can generate 12426 Copyright Monitoring Center certificates, automatically upload them to the Baidu blockchain storage system, and synchronize them to the Beijing Internet Court.

Baijiahao also offers a straightforward channel via which authors can file complaints about infringements. For high-risk content, Baidu implements multi-tiered controls that incorporate automatic review, manual review, and legal evaluation, thus ensuring healthy and positive content on this platform.

Baidu Wenku wins the 2020 China Copyright Outstanding Contribution Award

For its innovation in copyright protection and operation and unique copyright services, Baidu Wenku won the 2020 China Copyright Outstanding Contribution Award bestowed by the Copyright Society of China.

Baidu Wenku is committed to protecting the copyright of digital documents across the network through technological means. Designed for copyright protection, its proprietary Anti-piracy DNA System has an average daily processing capacity of over 1 million. Its credential storage service pioneered the use of blockchain technology in the document copyright protection industry. It also offers content originators blockchain-based credential storage service, copyright certification, and real-time monitoring. This creates a complete copyright service chain from source to sale, which protects the legitimate rights and interests of content creators.

In 2020, Baidu Wenku took action against piracy involving approximately 130 million documents. It issued free copyright protection services more than 2 million times and its blockchain-based credential storage service fulfilled over 400,000 service requests within weeks of its launch.

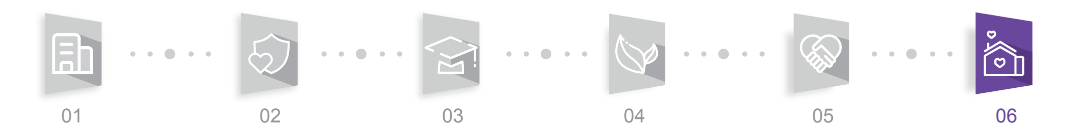





VI Contributing to society

Upholding the social responsibility concept of “Do Better with Tech”, Baidu has been committing to social causes and philanthropy and has gradually formed a social welfare project system with Baidu characteristics. Upon the outbreak of COVID-19, we immediately leveraged our resources and technological expertise to help fight against the pandemic.





Responding to COVID-19

Since the outbreak of COVID-19, we have been taking the lead in providing financial and material support to society and developing a comprehensive prevention and control strategy based on AI, big data, and cloud computing. All were used on the pandemic frontline.

We established a CNY 300 million pandemic and public health security fund to provide technical and financial support to authoritative institutions such as the Chinese Center for Disease Control and Prevention, Chinese Academy of Sciences, Chinese Medical Association, promoting virus analysis and vaccine drug development. We quickly developed AI-powered products and services to support the pandemic prevention and control and the safe resumption of work and production.

Baidu open-sourced algorithms to support virus research

We worked closely with the Chinese Center for Disease Control and Prevention (China CDC) to jointly establish the China CDC Emergency Technology Center & Baidu Gene Sequencing Workstation. This used AI and big data to monitor the pandemic, identify relevant scientific needs, and develop customized virus RNA secondary structure analysis tools. In this collaboration, Baidu provided Linearfold, a linear-time algorithm. This was used to shorten virus genome-wide secondary structure prediction from 55 minutes to 27 seconds: a boost of 120 times that proved invaluable in the race to combat the pandemic.

Baidu's LinearDesign is the world's first mRNA vaccine gene sequence design algorithm. It has helped to effectively solve the most important stability issue in mRNA vaccine development and to accelerate vaccine development.

Baidu Maps' big data supported pandemic prevention and control decisions

In addition to following pandemic developments and tracking real-time news reports, Baidu Maps launched a big-data-based platform and real-time road traffic information platform to measure the movement of people and real-time road traffic. These assisted national prevention and control in the initial stage of the pandemic. The two platforms handled over 3 billion user interactions during the pandemic.

We also launched, at the first opportunity, useful functions such as a fever clinic map, a pandemic cluster map, and a nucleic-acid-testing location query function. In the post-pandemic stage, we launched a work resumption map and a return-to-work travel map. These actions promote the orderly resumption of work and production and assist society to restore normalcy.

AI temperature screening supports monitoring in public places

Rising to the challenge of temperature-taking in busy public places such as railway stations and airports, Baidu launched an AI monitoring system. This provides a non-contact, non-intrusive, efficient, and reliable way to measure temperature, with a real-time monitoring capacity of more than 200 people per minute. By the end of 2020, our system had completed hundreds of millions of measurements.

AI for social good

In 2020, Baidu launched the Baidu Stars Plan, which serves as Baidu's corporate social responsibility (CSR) platform and an ecosystem capability sharing platform that combines Baidu's traffic, technology, ecosystem, and funding capabilities in line with the concept of leveraging technology to solve social issues. We set up the Stars Plan Developers Fund, providing CNY 10 million, 10 million computing power, and 10 billion data support for full communication between NGOs and Baidu developers. This move has contributed to the delivery of technological support for the implementation of more charity initiatives.

Baidu is committed to technological inclusion with its AI technological achievements and practical experience to create sustainable infrastructures. We strive to leverage our achievements, experience and knowledge to build a more inclusive society and a sustainable world.



AI to improve access to healthcare

Our Baidu Intelligent Healthcare brand and AI-powered healthcare products honor the mission of supporting the AI empowerment of grassroots healthcare. For example, we have an all-in-one machine capable of quick offline detection of ocular fundus diseases. This helps identification of such diseases in people in remote areas that lack proper medical services. Meanwhile, a clinical decision support system, powered by the diagnoses and treatments of doctors at top tertiary hospitals, helps grassroots doctors reduce misdiagnoses and improve the diagnosis and treatment.



Baidu AI Xunren

Our Baidu Xunren interactive platform, a mini-program on the Baidu App, helps find missing persons. Photos of the people, uploaded by users, are automatically compared to those of missing person databases on platforms such as the Ministry of Civil Affairs and baobeihuijia.com.

The powerful platform draws on Baidu's big-data-based user profiling and is powered by search and information flow. As of December 31, 2020, the platform had helped reunite 11,942 missing or abducted persons with their families.

In 2020, Baidu Xunren won the "Technology Empowerment Champion Award" of the "Golden Key-SDG-Oriented China Action" award.

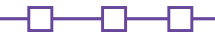












AI to help the senior

Combining medical care and home care for the elderly requires intelligent solutions. And to address the increasingly serious senior care issue in China, Baidu, partnering with Beijing Sport University, the Institute of Psychology of the Chinese Academy of Sciences, Tsinghua University, and other universities and research institutions, launched the Baidu Wufu Intelligent Senior Care Platform. This platform, leveraging Baidu's AI speech interaction technology, offers modules tailored to seniors to meet their everyday needs with fun and convenience.

In December 2020, Xiaodu Smart Display introduced the Elder Mode. This mode provides larger font sizes as well as a full range of functions and resources that are frequently used by senior users, such as news, health tips, and entertainment. It enhances voice recognition of common accents of Mandarin and clearly marks the customer service number on the home screen, so that senior users can contact the customer service at any time for any issues encountered. In addition, the Baidu App, Baidu Maps and other products have been optimized their contents and features to provide senior users with convenience.



AI to cultivate new business models and boost local employment

Baidu is committed to expanding AI applications while unlocking its empowering possibilities. Since 2018, we have established the Baidu (Taiyuan) Artificial Intelligence Data Annotation Center, China's largest single-structure data annotation base in terms of staff and output value.

To provide data annotators, Baidu retrained tens of thousands of low-skilled and undereducated workers. We provided better salaries and broader career prospects, thus boosting local employment while promoting the data annotation profession development in Shanxi.

2021 Outlook

Times enable their companies to realize visions, and in turn, companies drive the progress of times. For 20 years, Baidu has achieved rapid growth in the fast lane. We have remained true to—and steadily advanced—our commitment to enabling users' growth, empowering the industry ecosystem and giving back to the community with technological innovation.

Looking forward, we will continue to uphold our mission to make the complicated world simpler through technology. Within the company, we will continuously enhance our ESG management, strengthen our corporate governance and business integrity, solidify our cybersecurity and privacy protection, pursue green development, and value talent development.

Outside the company, we will continue to invest in nurturing technical talent, join hands with partners to drive the industry's development and bridge the digital divide. We will care for disadvantaged groups, leverage technological strengths, and act responsibly for all stakeholders, contributing our due efforts to a better society for everyone.



Appendices

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		A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	67
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		A2.3 Description of energy use efficiency initiatives and results achieved.	68-70
		A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	68-70
		A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	N/A
	Aspect A3: The Environment and Natural Resources	General Disclosure Policies on minimising the issuer's significant impact on the environment and natural resources.	72
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		B4.2 Description of steps taken to eliminate such practices when discovered.	51,60
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		B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	31
	Aspect B6: Product Responsibility	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer	76-78
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		B8.2 Resources contributed (e.g. money or time) to the focus area.	86

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102-4	Location of operations	About us	4
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	103-2 The management approach and its components	Business ethics	30
	103-3 Evaluation of the management approach	Business ethics	30
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	/	/
Environmental			
GRI 302：Energy			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Greening our business	70
	103-2 The management approach and its components	Greening our business	70
	103-3 Evaluation of the management approach	Greening our business	70
302-1	Energy consumption within the organization	Promoting sustainability	66
302-2	Energy consumption outside of the organization	Key environmental performance indicators	63
302-3	Energy intensity	Promoting sustainability	66
302-4	Reduction of energy consumption	Greening our business	70
302-5	Reduction in energy requirements of products and services	Greening our business, putting sustainability into action	70,72
GRI 303：Water			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Greening our business	70
	103-2 The management approach and its components	Greening our business	70
	103-3 Evaluation of the management approach	Greening our business	70
303-1	Water withdrawal by source	Greening our business	70
303-3	Water recycled and reused	Greening our business	70
GRI 305：Emissions			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Greening our data centers	68-69
	103-2 The management approach and its components	Greening our data centers	68-69
	103-3 Evaluation of the management approach	Greening our data centers	68-69
305-1	Direct (Scope 1) GHG emissions	Key environmental performance indicators	66
305-2	Energy indirect (Scope 2) GHG emissions	Key environmental performance indicators	66
305-3	Other indirect (Scope 3) GHG emissions	Key environmental performance indicators	66
305-4	GHG emissions intensity	Key environmental performance indicators	66
305-5	Reduction of GHG emissions	Key environmental performance indicators	66
GRI 306：Effluents and Waste			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Greening our business	71
	103-2 The management approach and its components	Greening our business	71
	103-3 Evaluation of the management approach	Greening our business	71
306-1	Water discharge by quality and destination	Key environmental performance indicators	67
306-2	Waste by type and disposal method	Key environmental performance indicators	67

Disclosure	Description	Chapters	Pages
GRI 307：Environmental Compliance			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Greening our business	70-71
	103-2 The management approach and its components	Greening our business	70-71
	103-3 Evaluation of the management approach	Greening our business	70-71
307-1	Non-compliance with environmental laws and regulations	Greening our business	None
Social			
GRI 401：Employment			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Talent assurance	51-53
	103-2 The management approach and its components	Talent assurance	51-53
	103-3 Evaluation of the management approach	Talent assurance	51-53
401-1	New employee hires and employee turnover	Talent assurance	52-53
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Employee incentives, employee care	58-59,62
GRI 403：Occupational Health and Safety			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Employee care	63
	103-2 The management approach and its components	Employee care	63
	103-3 Evaluation of the management approach	Employee care	63
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Employee care	63
GRI 404：Training and Education			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Talent assurance	54
	103-2 The management approach and its components	Talent assurance	54-57
	103-3 Evaluation of the management approach	Talent assurance	54-57
404-1	Average hours of training per year per employee	Talent assurance	57
404-2	Programs for upgrading employee skills and transition assistance programs	Talent assurance	54-57
404-3	Percentage of employees receiving regular performance and career development reviews	Employee incentives,	58
GRI 405：Diversity and Equal Opportunity			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Talent assurance	51
	103-2 The management approach and its components	Talent assurance	51
	103-3 Evaluation of the management approach	Talent assurance	51
405-1	Diversity of governance bodies and employees	Talent assurance	52
GRI 406：Non-discrimination			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Employee care	60
	103-2 The management approach and its components	Employee care	60
	103-3 Evaluation of the management approach	Employee care	60
406-1	Incidents of discrimination and corrective actions taken	Employee care	Strictly prohibit discrimination
GRI 408：Child Labor			
GRI 103：Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Talent assurance	51
	103-2 The management approach and its components	Talent assurance	51
	103-3 Evaluation of the management approach	Talent assurance	51
408-1	Operations and suppliers at significant risk for incidents of child labor	Talent assurance	Strictly prohibit child labor

Disclosure	Description	Chapters	Pages
GRI 409: Forced or Compulsory Labor			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Talent assurance	51
	103-2 The management approach and its components	Talent assurance	51
	103-3 Evaluation of the management approach	Talent assurance	51
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	Talent assurance	Strictly prohibit forced or compulsory labor
GRI 412: Human Rights Assessment			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Employee care	60
	103-2 The management approach and its components	Employee care	60
	103-3 Evaluation of the management approach	Employee care	60
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Employee care	60
GRI 413: Local Communities			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Contributing to society	86-88
	103-2 The management approach and its components	Contributing to society	86-88
	103-3 Evaluation of the management approach	Contributing to society	86-88
413-1	Operations with local community engagement, impact assessments, and development programs	Contributing to society	86-88
GRI 414: Supplier Social Assessment			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Business ethics	31
	103-2 The management approach and its components	Business ethics	31
	103-3 Evaluation of the management approach	Business ethics	31
414-1	New suppliers that were screened using social criteria	Business ethics	31
414-2	Negative social impacts in the supply chain and actions taken	Business ethics	31
GRI 416: Customer Health and Safety			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Privacy protection, content management	40-43, 76-78
	103-2 The management approach and its components	Privacy protection, content management	40-43, 76-78
	103-3 Evaluation of the management approach	Privacy protection, content management	40-43, 76-78
416-1	Assessment of the health and safety impacts of product and service categories	Content management	76-78
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Content management	76-78
GRI 417: Marketing and Labeling			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Content management	77
	103-2 The management approach and its components	Content management	77
	103-3 Evaluation of the management approach	/	/
417-1	Requirements for product and service information and labeling	Content management	77
417-2	Incidents of non-compliance concerning product and service information and labeling	Content management	77
GRI 418: Customer Privacy			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Privacy protection	40
	103-2 The management approach and its components	Privacy protection	40-43
	103-3 Evaluation of the management approach	Privacy protection	43
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Privacy protection	None

Reader feedback form

Dear readers:

Thank you for reading our 2020 Environmental, Social and Governance Report. We sincerely welcome your valuable comments and suggestions, and look forward to your feedback through the mail, email, or online survey with the QR code below.

1. As a stakeholder of Baidu, what is your relationship to Baidu?

□ Shareholder □ Employee □ Supplier or Business Partner □ User □ Government □ Community

□ Financial Institution □ Academic Institution □ Others (Please specify)____________

2. What is your overall comment on this report?

□ Excellent □ Good □ Average □ Below average

3. What do you think about the clarity, accuracy and completeness of the information disclosed in this report?

□ Excellent □ Good □ Average □ Below average

4. What do you think about the comprehensiveness of Baidu's economic responsibilities reflected in this report?

□ Excellent □ Good □ Average □ Below average

5. What do you think about the comprehensiveness of Baidu's environmental responsibilities reflected in this report?

□ Excellent □ Good □ Average □ Below average

6. What do you think about the comprehensiveness of Baidu's social responsibilities reflected in this report?

□ Excellent □ Good □ Average □ Below average

7. What do you think about the design and layout of this report?

□ Excellent □ Good □ Average □ Below average

8. Which part of this report do you think needs improvement?

□ Enhancing corporate governance □ Building trust □ Nurturing talents

□ Promoting sustainability □ Improving service □ Contributing to society

9. Content that you wish to know more about beyond this report?

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10. Suggestions regarding our ESG performance and reporting?

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